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MENTAL DISORDERS OF THE CLIMACTERIC OF WOMEN.

By S. EVAN JONES, M.B.,
Medical Superintendent;

AND

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Senior Medical Officer, Psychiatric Clinic, Broughton Hall.

IF a graph of the rate of incidence of insanity at the different age periods be drawn, it will be seen to rise progressively to the age of forty years, where there is a peak followed by a short descent and a plateau continuing to the age of sixty-five, indicating that the rate of incidence remains uniform. At sixty-five a second rapid ascent occurs in the curve and this is due to the appearance of senile mental disorders (see Chart I).

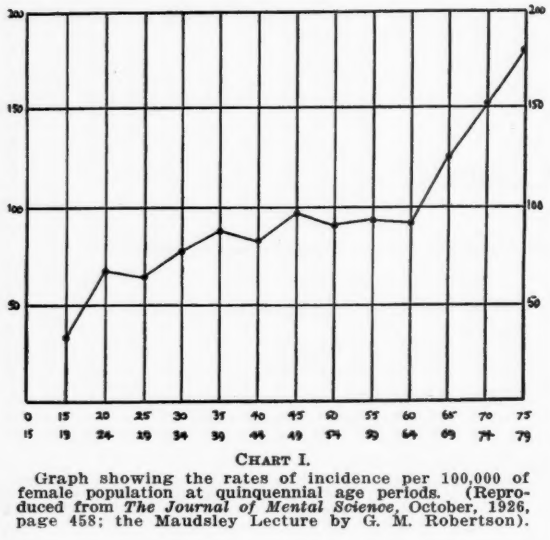

CHART I.

Graph showing the rates of incidence per 100,000 of female population at quinquennial age periods. (Reproduced from *The Journal of Mental Science*, October, 1926, page 458; the Maudsley Lecture by G. M. Robertson).

In this paper we are concerned with the mental disorders which cause the increase of incidence at the climacteric period.

In approaching our subject we decided to avoid preconceptions by analysing the histories of patients who on admission to Broughton Hall and Callan Park Hospitals were within the involution period.

The mean age of the menopause was determined on reliable information obtained from 108 patients at Broughton Hall and was found to be forty-seven. The extremes were fifty-five and thirty-six; in the latter case cessation of menstruation occurred suddenly after the death of the patient's husband and amenorrhœa had continued to the time of her admission at the age of fifty-six.

Since the actual menopause is so uncertain as to time, it was considered advisable to include in our analysis all patients who had been admitted to Broughton Hall between the ages of forty and sixty, in number 250. That this period does not include senile disorders is shown by the fact that there were only four cases of senile psychoses in the series. With regard to the Callan Park cases (we are deeply indebted to Dr. J. A. L. Wallace for permission to use their records) in view of the greater amount of material available, the age period forty to fifty was taken; the number of patients was 561. Thus our conclusions are based on the examination of 811 case histories.

CLASSIFICATION OF MENTAL DISORDERS OCCURRING DURING THE INVOLUTION PERIOD.

The cases were classified in seven main groups (see Table I): melancholic, manic, paranoid, alcoholic, confusional and miscellaneous psychoses and finally the psychoneuroses.

A glance at the table shows that the melancholic psychoses predominate and represent 40% of all admissions. The group of next importance was the confusional insanities, comprising 14% of cases. Manic disorders are relatively rare. Later reference will be made to the other groups.

Melancholic Psychoses.

Melancholia has as its characteristic symptom more or less intense emotional depression which is manifested by facial expression and the usual indications of intense misery. This affective state is usually accompanied by psychomotor retardation.

Vegetative disturbances, anorexia, constipation, are common and patients suffer from insomnia. Most of these patients are potential suicides, but the impulse towards self-destruction is hindered by the prevailing psychomotor inhibition.

Such is the condition found in a case of simple melancholia. Sometimes the psychomotor inhibition is so extreme that voluntary activity is in abeyance; the patient is mute, indifferent to the comfort or discomfort of her surroundings and resistive to all attentions. At the same time the patient is profoundly depressed, but the affective state is masked by the volitional retardation. This is the stuporose type.

On the other hand the intense depression may gain motor expression; the patient walks or shuffles aimlessly about, wringing the hands or tearing the hair and perhaps repeating indefinitely a stereotyped phrase expressive of mental misery, such as "Oh, my God! Oh, my God! Oh, my God!" When such motor restlessness and affective depression are associated, the condition is termed agitated melancholia.

In other patients there is an intense and continuous state of extreme apprehension, the expression of the anticipation of some frightful impending harm: the anxiety form.

We do not advance the above subdivision as a hard and fast classification, as the different forms tend to merge into one another and the patient may pass through one or more of the different phases; probably the types represent different degrees of severity of the same psychopathological process. Nevertheless, the classification is useful clinically from the prognostic standpoint.

TABLE I.—CLASSIFICATION OF DISORDERS OCCURRING DURING THE INVOLUTION PERIOD.

Mental Condition.	Number of Patients.			Percentage.
	Broughton Hall.	Callan Park.	Total.	
Psychoneuroses	66	—	66	8·1
Depressive psychoses	105	213	318	39·2
Manic psychoses	11	55	66	8·1
Paranoid psychoses	7	27	34	4·2
Alcoholic psychoses	18	63	81	10·0
Confusional psychoses	13	102	115	14·2
Miscellaneous psychoses	30	101	131	16·2
Total	250	561	811	100·0

Table II shows the distribution of the different types amongst our patients together with results of treatment.

The prognosis for simple and anxiety forms is good, 60% to 80% of patients recovering after a period of four to seven months. Prognosis is considerably graver in the agitated and stuporose types, in the former because the continued restlessness leads rapidly to exhaustion and in the latter because the extreme motor inertia coupled with the inanition brought about by their resistiveness to feeding predisposes them to intercurrent infections.

Delusional Melancholia.

In the cases we have just referred to there were no prominent delusional symptoms, but in the majority of the cases of melancholia delusions were present. Delusional melancholia is the largest single group in our series, numbering 188 cases. In some patients the depression predominates; in others the delusional elements. Agitation, stupor and anxiety occur in these cases as in the simple types.

The delusions were most frequently persecutory. Commonly the patient thought her neighbours were injuring her. In some the delusions had a strong sexual colouring, for example, one woman said two thousand men wanted her.

After persecutory delusions, obsessive ideas of moral inferiority were the most common. Clinically delusions of moral inferiority are highly characteristic of involutional melancholia. Often patients recall a minor delinquency of early life and magnify its importance to such an extent that it occupies the whole of their consciousness and they become obsessed with the certainty of eternal damnation. In others, however, the idea of inferiority cannot be traced to any actual misdemeanour.

Somatic delusions, sometimes of a bizarre character, were frequent, for example a patient said all the ward washing was done in her mouth; another that the doctor put drugs on her ovaries to prevent conception.

Expansive delusions were occasionally found, for example one patient said she gave birth to three hundred children every day.

Other patients thought they were to be hanged or crucified or otherwise severely dealt with. Delusions of infidelity were fairly common.

Hallucinations are relatively rare in simple melancholia, but were present in 50% of the delusional cases. Auditory hallucinations (as is usually the case in the psychoses) predominated. They generally took the form of abusive or threatening voices. Visual hallucinations were rarely met with. When present they were associated with the patient's ideas of moral inferiority; in some of them visions of God or the devil appeared. Olfactory and gustatory hallucinations were rather more frequent and were related to somatic or persecutory delusions.

The prognosis in delusional melancholia is fair; 43% of our patients recovered in an average period of twelve months. It would appear then that when delusions are present in melancholic psychoses, the prospects of recovery are less good.

Manic Group.

Mania characterized by emotional exaltation and increased psychomotor activity is the complement of melancholia in the manic depressive syndrome of Kraepelin and as such might be expected to occur with similar frequency. However, manic psychoses were rarely present in the patients under review, occurring in only 8%.

As with the melancholic disorders, we have subdivided the manic insanities into two groups, which were approximately equal in number. The first is acute mania without prominent delusional symp-

TABLE II.—ANALYSIS OF MELANCHOLIC PSYCHOSES.

Clinical Type.	Number of Patients.	Patients Recovered.			Relieved or not Improved.	Died.
		Number.	Percentage.	Duration of Symptoms in Months.		
Melancholia acute—						
Simple	65	51	78%	7	11	3
Agitated	15	5	33%	36	4	6
Anxiety	26	15	58%	4	9	2
Stuporose	24	8	33%	7	8	8
Melancholia delusional	188	81	43%	12	83	24

TABLE III.—ANALYSIS OF DIAGNOSTIC GROUPS.

Mental Condition.	Number of Patients.	Patients Recovered.			Relieved and not Improved.	Died.
		Number.	Percentage.	Duration of Symptoms in Months.		
Acute mania	34	19	56%	7	12	3
Delusional mania	32	2	6%	36	28	2
Paranoid psychoses	34	2	6%	30	29	3
Alcoholic psychoses	81	48	59%	6	16	17
Confusional psychoses	115	54	47%	7	13	48
Psychoneuroses	66	34	51%	5	32	—
Miscellaneous	131[1]					

[1] Not analysed.

toms: the second class, delusional mania, comprises cases in which delusions were strongly in evidence.

In the former group the prognosis was good, 56% of the patients recovering, in the latter the prognosis was grave, there being only 6% of recoveries. The delusions were most frequently of persecutory type. Hallucinations of hearing were common.

Paranoid Group.

We have included under the heading of paranoid group cases of so-called paraphrenia and paranoia and in general delusional states in which there was no definite affective change. The group was a small one and formed only 4% of our series. The prognosis is grave; only 6% of the patients recovered.

The delusions were persecutory or expansive, the former type predominating.

There were eight cases of paranoia including an instance of *folie à deux* (this patient and her husband had the same systematized delusions of persecution).

Alcoholic Psychoses.

Patients who suffered from alcoholic psychoses numbered 81, this is 10% of the total. The clinical manifestation enabled them to be classified in four groups: confusional, melancholic, paranoid and chronic, of which the confusional type was most important and it may be considered the characteristic alcoholic psychosis.

The hall mark of alcoholic confusion, as in other confusional psychoses, is disorientation with regard to time, place and person.

An important diagnostic feature is the frequent presence of peripheral neuritis. Korsakow's psychoses have been included in this group.

The chronic group comprises those patients who as the result of long addiction to drink have become mentally and morally degenerate.

Table IV shows the distribution and result of treatment of the patients in the various groups.

The prognosis is good, especially so in the depressive types which showed a recovery rate of 84%.

Confusional Psychoses.

Confusional psychoses are characterized by disorientation and mental confusion. Patients are actively hallucinated. Visual hallucinations, being relatively more frequent than in other psychoses are of diagnostic significance. Intervals of lucidity may occur. On the motor side the majority of the patients are noisy and restless and this excessive psychomotor activity may merge into a continued delirium which terminates in death from exhaustion. In a considerable group, however, there is a depression of motor activities and these patients are dull and may become stuporose; some sink into a typhoidal state.

In the confusional psychoses the physiogenic factors are of prime importance and although cases occur in which no organic ætiology is apparent, usually there is obvious evidence of some toxic or exhaustive process.

In 50% of our patients definite physical disease was found to be the important ætiological factor.

In Table V we show the causes attributed in the ætiology of the condition in our patients. In regard to prognosis 47% recovered and 42% died. The prognosis is largely that of the physical disease present and mental recovery may be expected, if death does not ensue from exhaustion or from the ordinary evolution of the physical disease.

Miscellaneous Group.

In Table VI we specify the conditions included in this group, which comprises 131 patients.

TABLE IV.
SHOWING DIFFERENT TYPES AND RESULT OF TREATMENT OF THE ALCOHOLIC PSYCHOSES.

Type.	Number of Patients.	Patients Recovered.		Relieved and not Improved.	Died.
		Number.	Percentage.		
Melancholic	19	16	84%	1	2
Confusional	43	26	60%	6	11
Paranoid	12	5	42%	5	2
Chronic	7	1	14%	4	2
Total	81	48	59%	16	17

TABLE V.
SHOWING APPARENT AND ATTRIBUTED CAUSES OF CONFUSIONAL PSYCHOSES.

Physical Causes.	Number of Patients.
Exophthalmic goitre	7
Myxœdema	1
Diabetes	3
Pernicious anæmia	4
Pulmonary diseases	8
Rheumatic fever	3
Encephalitis	1
Colitis	1
Sepsis	1
Syphilis	2
Enteric	1
Pulmonary tuberculosis	1
Renal disease	5
Cardio-vascular disease	7
Gynæcological disorders	6
Exhaustion	6
Psychic causes—	
Domestic worry	13
Emotional shock and worry	10

General paralysis is the most important member: there were forty-one cases. A few cases of syphilitic dementia were also found.

Cerebral syphilitic disorders are significant in relation to the involution period, since the onset of the paretic psychosis is usually about the age of forty and syphilis is thus one of the factors responsible for the increased rate of incidence of insanity at this time of life.

There were fifteen cases of essential epilepsy, in all of which the onset of symptoms had been in earlier life. It may be stated that an epilepsy occurring after the age of forty is symptomatic of organic cerebral lesions due to syphilis, alcohol or arterio-sclerosis.

The other psychoses included in this group do not require special mention.

Psychoneuroses.

Psychoneuroses represented 27% of the Broughton Hall series. There were sixty-six patients in all.

Neurasthenia (forty-five patients) was more frequent than hysteria (twenty-one patients). The mean age of incidence for the latter was forty-three as against forty-seven for the former group, suggesting that the tendency to the hysterical type of psychopathic reaction which is essentially regressive or infantile in nature, has become exhausted by the time the involution period is reached.

The three principal types of hysteria were represented, the anxiety and compulsion forms being approximately equal in number.

There were few cases of conversion hysteria.

Neurasthenia was twice as common as hysteria and the mean age of incidence of forty-seven corresponded with the actual menopause. The usual clinical characters of this neurosis were present, vaso-motor paræsthesias were perhaps more in evidence than is usually the case. Probably neurasthenia can be regarded as the characteristic neurosis of involution.

GENERAL CONSIDERATIONS.

It is undoubted that there is an increased incidence of insanity during the involutional period (see Graph I). This is partly explained by the development at this time of the syphilitic psychoses, but these are much less important in women than in men. There seems little doubt that the metabolic disturbances consequent on the cessation of ovarian function produce an emotional instability which is manifested by a greater tendency to psychoneurotic reactions. That the disorders of this period are not due to permanent organic changes is shown by the fact that there is a rapid fall in the incidence of insanity after the climacteric and the rate does not rise again until the degenerative cerebral changes of senility begin to appear at the age of sixty-five. This is supported by the fact that our records of blood pressure in these patients reveal no evidence of the presence of cerebral arterio-sclerosis. Examples of cerebral arterio-sclerosis have, it is true, been met with in our patients but they are rare.

TABLE VI.
MISCELLANEOUS GROUP.

Mental Condition.	Number of Patients.
Epilepsy	15
Schizophrenia	12
Dementia—	
Secondary	3
Organic	10
Paralytica	41
Syphilitica	5
Choreic	4
Puerperal psychoses	11
Psychopathic personality	7
Mental deficiency	16
Neurological conditions	7
Total	131

A review of the mental disorders of the involution period wellnigh gives a bird's-eye view of the whole of psychiatry, the striking features of which are the predominance of melancholic psychoses, the relative infrequency of mania and the rarity of schizophrenia. As schizophrenia is a disease of adolescence, its infrequency at the climacteric is to be expected, but it is surprising that mania, the counterpart of melancholia, is not more in evidence.

To speculate we suggest that this predominance of depression is due to the loss of the activating influence of ovarian hormones on cerebral centres.

We found, too, that involutional mental disorders are generally precipitated by psychic or physical stresses in patients already predisposed to the attack by heredity, by previous attacks or by inferiority in the mental make-up.

Conjugal Conditions.

An examination of the conjugal states of our patients was illuminating. At all ages the rate of incidence of insanity is greater in single than in married women, but the discrepancy is greater at the period with which we are now dealing. A glance at Table VII shows that particularly in melancholia and the paranoid psychoses there is a great preponderance of single women. This fact is open to two interpretations: (i) That the single state itself predisposes women to these psychoses or (ii) that they are single because of their psychopathic dis-

position, that is they are of the "shut-in type" that does not marry. In many of these women there is an embitterment from an old love affair; in some there is a history of seduction. In many families, too, one girl remains at home with the parents or undertakes the responsibility of dependent relatives and does not have the opportunity for courtship. It is at the involutional period that these women lose their parents and the rupture of the familial tie which has persisted long beyond the usual period, throws the individual on to her own resources at a time when she is ill fitted to establish a position for herself. We have had many histories of melancholic psychoses being precipitated by the loss of a near relative. That the influence of the single state is an important factor in the ætiology of the melancholic psychoses is borne out also by the fact that confusional psychoses (to which, as being of an infective or toxic origin, all women are equally exposed) affect single and married women in approximately the same proportions in which they are present in the general population. Again we occasionally find that sexual activity is at least temporarily heightened at this period and we have notes of a number of seductions occurring after the age of forty. For example a single woman, *ætatis* forty-four years, was seduced under the promise of marriage and became pregnant. The discovery that her seducer was a married man precipitated an attack of stuporose melancholia which cleared up in seven weeks. Again we find that in many patients the delusions and hallucinations have an erotic colouring.

The paranoid psychoses appear in persons of certain definite mental characteristics. They have a "shut-in personality" and their mental make-up is incompatible with the idea of marriage. Hence, unlike many melancholics, they remain single from choice.

Amongst the alcoholic patients at Callan Park 22% were widows whilst in the general population 8% of women between the ages of forty and fifty are widows. This surely indicates that the widow is apt to seek solace for her conjugal loss in the brimming beaker. It may be worth adding here that many of the married women and widows in our series had either no children or very small families.

Hereditary Influences.

It is very difficult to obtain accurate information regarding the incidence of insanity among relatives of the patients and we do not feel that the figures shown in Table VIII reveal the true state of affairs. In any case we think that insane heredity is but a minor predisposing factor in the causation of these psychoses.

Previous Attacks.

With regard to previous attacks we have elicited two interesting facts from the examination of our material (see Table VII).

1. Regarding melancholics, 70% to 80% of the melancholics had their first attack during the involutional period, a fact we regard as evidence supporting the argument that the climacteric is an important ætiological factor in these psychoses.

2. The reverse was the case with manic conditions; of these patients 70% had attacks, in some cases numerous, preceding the age of forty.

Exciting Causes.

The exciting causes attributed were very varied, but they fall into two groups: physical, such as toxæmia and exhaustion from disease, and psychic, that is emotional stresses and strains. There is no need to specify the physical disorders met with, except that they predominated in the confusional and alcoholic groups. The psychic causes which occurred most frequently were worry on account of domestic infelicity, emotional shock following loss of parents or husband or near relatives to whom the patient had been much attached. In

TABLE VII.
SHOWING PERCENTAGES OF CONJUGAL STATES IN VARIOUS GROUPS.

Mental State.	Number of Patients.	Percentages.		
		Single.	Married.	Widowed.
BROUGHTON HALL SERIES.				
General Population of same ages	—	15	73	12
Patients of series	250	27	57	16
Patients with melancholia	105	32	54	14
Acute	47	25	62	13
Delusional	58	36	48	16
Acute mania	11	36	55	9
Paranoid psychoses	7	70	15	15
Alcoholic psychoses	18	11·5	77	11.5
Confusional psychoses	13	15	77	8
Miscellaneous psychoses	30	27	53	20
Hysteria	21	19	62	19
Neurasthenia	45	22	58	20
CALLAN PARK SERIES.				
General population of same ages	—	16	76	8
Patients of series	561	25	63	12
Patients with melancholia	213	35	57	8
Acute	83	40	52	8
Delusional	130	32	60	8
Acute mania	23	13	78	9
Delusional mania	32	19	66	15
Paranoid psychoses	27	44·5	44·5	11
Alcoholic psychoses	63	10	68	22
Confusional psychoses	102	11	75	14
Miscellaneous psychoses	101	29	60	11

In the Broughton Hall series the patients' ages ranged from forty to sixty and in the Callan Park series they ranged from forty to fifty.

TABLE VIII.

SHOWING MEAN AGE, CONJUGAL STATE AND INCIDENCE OF HEREDITY AND PREVIOUS ATTACKS IN THE VARIOUS GROUPS.

Mental State.	Number of Patients.	Heredity Percentage.	Previous Attacks. Percentage.	Mean Age.	Conjugal State.		
					Single.	Married.	Widowed.
Broughton Hall Series—							
Acute melancholia	47	21	30	46	12	29	6
Delusional melancholia	58	26	30	49	21	28	9
Acute mania	11	40	70	47	4	6	1
Paranoid psychoses	7	29	43	48	5	1	1
Alcoholic psychoses	18	16	5	50	2	14	2
Confusional psychoses	13	—	15	45	2	10	1
Miscellaneous	30	(a)	(a)	(a)	8	16	6
Hysteria	21	28	33	43	4	13	4
Neurasthenia	45	25	18	47	10	26	9
Total	250	—	—	—	68	143	39
Callan Park Series—							
Acute melancholia	83	20	19	45	33	43	7
Delusional melancholia	130	20	22	44	41	79	10
Acute mania	23	13	74	45	3	18	2
Delusional mania	32	23	31	45	6	21	5
Paranoid psychoses	27	11	15	46	12	12	3
Alcoholic psychoses	63	20	27	45	6	39	14
Confusional psychoses	102	13	28	45	11	77	14
Miscellaneous	101	—	—	—	29	61	11
Total	561	—	—	—	141	354	66

(a) Not analysed.

many single women, too, an arduous life seems to culminate at this period in melancholia.

Evolution of the Various Psychoses.

Kraepelin originally separated a form of melancholia which seemed to occur at the climacteric. To this the name "involutional melancholia" was given. Dreyfus following up the after histories of these patients found that manic episodes occurred and the recent tendency has been to include this form of melancholia in the manic-depressive psychoses. We attempted to determine the evolution of the psychoses occurring in the period under review by examining the case histories of patients who on admission were within the age limit of forty to fifty and whose condition after a considerable stay in hospital had become chronic.

Table IX shows our results, obtained from 120 patients who were still in hospital after an average period of six years.

With regard to the acute melancholics 25% became manic, whilst of the delusional melancholics 22% developed manic symptoms, thus to some extent bearing out the proposition that involutional melancholia belongs to the manic-depressive psychosis.

Another point of interest is the fact that the condition of only 14% of these melancholic patients evolved into the paranoid type, whereas 47% of the manic patients became paranoid. This throws a little sidelight on the question of prognosis.

Prognosis.

1. In acute simple melancholia and in acute simple mania the prognosis is good.
2. In delusional melancholia the prognosis is fair.
3. In paranoid states and in delusional mania the prognosis is very grave.

The prognosis for the alcoholic psychoses, the confusional psychoses and the psychoneuroses is fair.

We think the following prognostic rules should be of considerable clinical value:

(i) Paranoid states unaccompanied by affective changes or accompanied by manic symptoms have a very bad prognosis. (ii) When paranoid conditions are accompanied by depression the prognosis is improved and alternately (iii) if melancholia is accompanied by delusions the prognosis becomes less good than in simple melancholia.

Conclusions.

There are many aspects of our subject which we have not had time to explore. Our study has been clinical and statistical.

We find that there is no psychosis peculiar to the climacteric, but at this period of life there is a great access of melancholic conditions of which the prognosis is good.

We consider that melancholia is the characteristic psychosis of the involution period, whilst neurasthenia is the characteristic neurosis.

MENTAL DISORDERS ASSOCIATED WITH THE ARTIFICIAL MENOPAUSE.

An examination of our records revealed sixty-four cases of artificial menopause, thirty-eight of which were due to hysterectomy and twenty-six to double oophorectomy. We have analysed separately the mental conditions of each group.

Mental Disorders Following Hysterectomy.

Patients who gave a history of total hysterectomy represent 2·8% of the total female admissions to Broughton Hall. In the majority the operation was performed for fibroid tumours; in a few it was for carcinoma or in course of Cæsarean section. Our

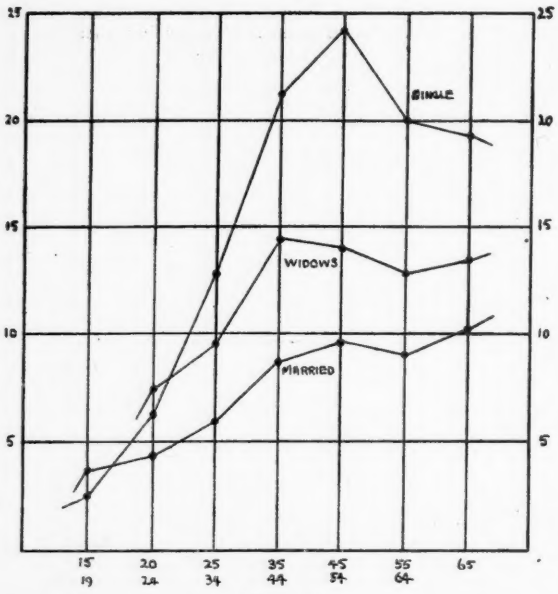

CHART II.

Graph showing the incidence of insanity in relation to conjugal status. Ratios per 10,000 of female population living at the different age periods. (Reproduced from *The Journal of Mental Science*, October, 1926, page 459; the Maudsley Lecture by G. M. Robertson.)

general impression had been that hysterectomy is a definite factor in precipitating a mental breakdown. However, the examination of our material showed that the mean age of our patients on admission was forty-four years and that an average period of six years had intervened between operation and date of admission.

Whilst it must be remembered that admission to a mental hospital is usually deferred as long as possible, nevertheless it is difficult to associate the mental breakdown with the operation after such a lapse of time. It is to be noted also that the ages of the patients on admission approximated closely to the physiological climacteric and it is possible that in many cases the mental breakdown was due to this factor rather than to the effects of the operation.

Table X shows the diagnostic classification of the mental states of patients in whom there was a history of hysterectomy, together with the result of treatment.

This table shows that a wide variety of mental disorders was met with and that there was no characteristic psychosis following hysterectomy. Nevertheless, depressive symptoms, being present in 55% of the patients, predominate as in the mental disorders of the physiological climacteric. The absence of any cases of mania is to be noted.

Although the causal relationship between the hysterectomy and the mental breakdown was not obvious, still in eleven cases the patients were admitted within twelve months of operation and in several there was a definite sequence of events leading from the operation and culminating in an acute psychosis as shown in the following cases.

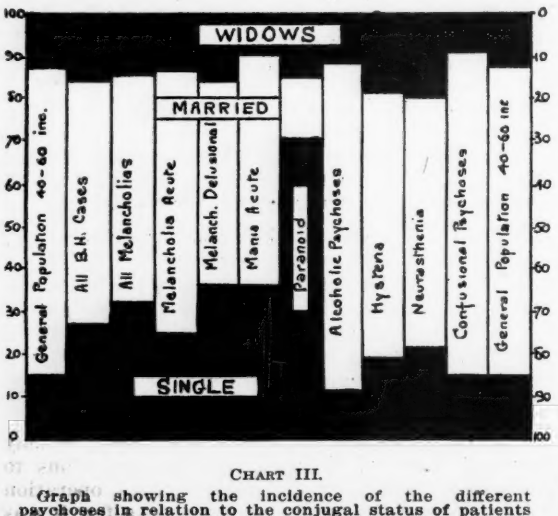

CHART III.

Graph showing the incidence of the different psychoses in relation to the conjugal status of patients of the Broughton Hall series, compared with the ratios of married, single and widowed women among the general population.

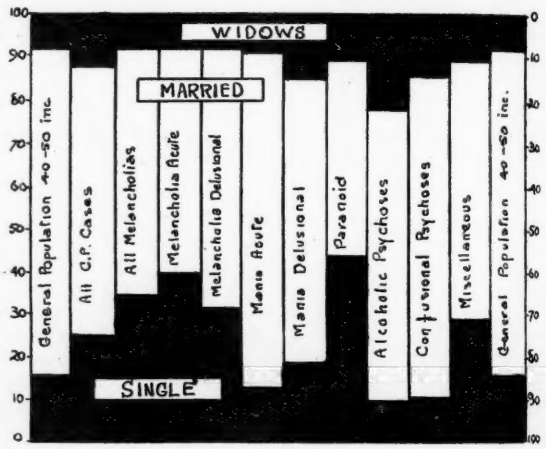

CHART IV.

Graph showing the incidence of the different psychoses in relation to the conjugal status of patients of the Callan Park series compared with the ratios of single, married and widowed women among the general population.

Hallucinatory Psychosis Terminating in Acute Confusional Insanity.

K.L., *ætatis* twenty-six years, single, had been subject to hysterical episodes since late adolescence. For six months she had excessive menorrhagia and four months ago total hysterectomy was performed for fibroids. She says she has not felt well since the operation; she became depressed and emotional, had long crying attacks, lost all energy and interest in her work. The crying episodes became more frequent and were associated with motor agitation and restlessness. She began to hear voices which said she was "rotten," that she had a "bad character," that she would be hanged. At first she had insight into these hallucinations, but they became more and more insistent and the patient became deluded. She thought she was pregnant and was going to have a baby or had had a baby. She became very apprehensive and was afraid to go to sleep. The voices said she was a bastard; this was probably determined by a genuine doubt about her parentage as she was unable to give any family history. The obsession of pregnancy became so strong that she had morning sickness.

TABLE IX.
SHOWING EVOLUTION OF THE VARIOUS GROUPS BASED ON CONDITIONS THAT HAD BECOME CHRONIC.

Form of Mental Disorder on Admission.	Number of Patients.	Average Duration of Illness. Years.	Form of Later Mental Disorder (Evolution).	Number of Patients.
Acute melancholia	19	4·5	Manic-depressive insanity	1
			Chronic mania	4
			Chronic melancholia	8
			Delusional melancholia	3
			Paranoid psychoses	2
			Dementia	1
Delusional melancholia	32	6	Manic-depressive insanity	2
			Chronic mania	5
			Chronic melancholia	15
			Delusional melancholia	3
			Delusional mania	2
			Paranoid psychoses	5
Acute mania	8	5	Chronic mania	6
			Manic-depressive insanity	2
Delusional mania	25	7·5	Manic-depressive insanity	2
			Chronic mania	3
			Delusional mania	1
			Paranoid psychoses	15
			Dementia	4
Paranoid psychoses	12	7	Paranoid psychoses	8
			Dementia	4
Alcoholic psychoses	10	6	Chronic mania	2
			Chronic melancholia	1
			Paranoid psychoses	2
			Dementia	5
Confusional psychoses	14	5	Manic-depressive insanity	1
			Chronic mania	4
			Paranoid	3
			Dementia	6

On admission the patient expressed delusions and hallucinations as above. She was very apprehensive and anxious and sought protection from some threatening influence.

Course.—For a time she improved, then relapsed and had recurrent attacks of hysterical excitement in which she adopted bizarre attitudes and exposed herself. These episodes became more frequent and culminated in a state of acute confusion which terminated in death from exhaustion.

Anxiety Melancholia.

E.M., *ætatis* thirty-seven years, a married woman with five children, had a nervous breakdown at fifteen following her mother's death. Her home life was unhappy after this, owing to her father's addiction to drink. Her married life was happy and uneventful except for a difficult confinement three years ago. Twelve months before admission she had a total hysterectomy for fibroids. For three months after the operation she felt well, but from that time has become progressively worse. She first complained of head pains, fatigue and irritability. She became despondent and anxious. At this time she was associated with an elderly woman who painted a lurid picture of the change of life and convinced the patient that she would have a nervous breakdown and would possibly become insane. Two months before admission her symptoms were aggravated by an attack of influenza. She now began to experience morbid impulses to injure herself

TABLE X.
SHOWING MENTAL CONDITIONS PRESENT IN AND THE RESULTS OF TREATMENT OF THIRTY-EIGHT PATIENTS IN WHOM HYSTERECTOMY HAD BEEN PERFORMED.

Mental Condition.	Recovered.	Not Improved.	Died.	Total.	
Neurasthenia	1	2	—	3	
Anxiety hysteria	3	—	—	3	8
Compulsion hysteria	—	1	—	1	
Conversion hysteria	—	1	—	1	
Simple melancholia	5	1	—	6	
Stuperose melancholia	1	—	—	1	
Anxiety melancholia	1	1	—	2	21
Delusional melancholia (persecutory)	3	2	1	6	
Delusional melancholia (inferiority)	2	3	1	6	
Confusional psychoses	3	—	—		3
Alcoholic psychoses	2	2	—		4
Dementia	—	1	—		1
Cerebral arteriosclerosis	—	1	—		1
Total	21	15	2		38

and her children and became obsessed by the belief that she was going to die. On admission she was depressed, extremely anxious and apprehensive, was fearful that she was becoming insane and felt that she could never get well. She complained of dull feelings in the head and incapacity to experience normal emotions. She had no *libido* since her operation.

Course.—She remained very anxious and apprehensive, acutely depressed and pessimistic, had cephalic paræsthesias and palpitation. Subsequently she improved slightly and becoming discontented was taken home where she attempted suicide by cutting her arm. On returning to hospital she was more depressed, admitted having impulses to kill herself and her children. Her condition became worse and as she insisted on leaving the hospital she was certified. She is now in a state of acute melancholia.

It is difficult to evaluate the exact influence of the operation in the evolution of the psychoses in these patients.

The first case was in a young woman with a long history of previous hysterical manifestations. It seems reasonable to suppose that in this instance the operation acted not as a physical factor, but by determining in a psychopathic patient a chain of events which culminated in the psychosis.

In the second patient, although there is a history of a nervous breakdown in adolescence, there was freedom from mental symptoms until three months after operation when she was brought under the influence of strong suggestion with regard to symptoms that might be expected to appear. She herself was aware that these suggestions had a profound effect on her and the operation itself seems to have been responsible by terminating menstruation and predisposing her to the anticipation of climacteric disorders.

Mental Disorders Following Double Oophorectomy.

Twenty-six of our patients (of these eleven were from Broughton Hall), representing 1% of female admissions, had had both ovaries removed. The mean age on admission was thirty-nine years and the average period that had elapsed since operation was six years.

Table X shows the diagnostic classification and results of treatment in our patients. Varied mental disorders are met with; depressive symptoms were not so frequent as in the hysterectomy series. There was one case of mania in a manic-depressive psychosis.

In six patients admitted within two years of operation subjective symptoms indicative of vasomotor disturbance, flushes, palpitations, throbbing were complained of, but did not appear to be of significance in determining the nature of the psychotic symptoms.

In only four cases was the patient admitted within twelve months of operation, so that here again it is difficult to draw definite conclusions as to the importance of the operation in provoking nervous or mental symptoms.

In five cases, however, there were histories of mental or nervous symptoms dating from the operation. Two of these are considered worthy of detailed report.

Obsessional Neurosis.

D.Z., *ætatis* thirty-one years, is a married woman with one child aged nine years. There is a history of *coitus interruptus* since the birth of her child. This patient had an oophorectomy three years ago and the remaining ovary was removed twelve months ago. The patient states that for the last four years she has been very anxious to have another baby, but her husband would not agree and there has been considerable domestic trouble over the question. Twelve months ago she says she underwent an operation at which with her husband's consent the second ovary was removed. This was a great blow to her as she recognized that her desire for another child could never be gratified. Ever since the operation she has not been able to think or speak of anything but her disappointment. She has brooded continually about it and at times shrieked to obtain relief from the obsessing thought. She has dull, dizzy feelings in the head, flushing and palpitation.

From the beginning of her illness she has loathed money and becomes nauseated if she handles or sees it. She says she feels this way because it was money that prevented her from having another child; although thrifty before her operation, she subsequently became extravagant. She has a similar feeling about jewellery which she explains in the same way. She also has a phobia for flowers, the origin of which she does not understand. She has lost all affection for her husband and has lost all interest in domestic affairs.

In this patient the operation frustrated a very strong desire to have children and precipitated an intense psycho-neurotic reaction.

Anxiety Hysteria with Recurrent Hallucinatory Episodes.

A.L., *ætatis* forty-three years, married, has two living children aged twenty-one and eleven.

TABLE XI.

SHOWING MENTAL CONDITIONS OF AND RESULTS OF TEATMENT IN TWENTY-SIX PATIENTS IN WHOM DOUBLE OOPHORECTOMY HAD BEEN CARRIED OUT.

Mental Condition.	Recovered.	Not Improved.	Died.	Total.
Neurastheia	1	—	—	1
Anxiety hysteria	1	3	—	4
Compulsion hysteria	—	1	—	1
Conversion hysteria	1	—	—	1
Simple melancholia	4	—	—	4
Anxiety melancholia	—	1	—	1
Delusional melancholia (persecutory)	2	1	—	3
Manic-depressive insanity	—	1	—	1
Confusional psychoses	5	—	1	6
Alcoholic psychoses	1	1	—	2
Paranoid psychoses	—	1	—	1
Epilepsy (arteriosclerotic)	—	1	—	1
Total	15	10	1	26

There is nothing of importance in the family and personal history except that her married life has not been happy.

She states that she was well until her operation ten months ago, double oophorectomy for cystic tumours. She did not convalesce well and felt weak. At this time she was worried not only by the death of her son, but also by the thought that her husband was inconsiderate to her. She had hot flushes, palpitations and headaches and anorexia. She became progressively worse and suffered from vague apprehensions. A week before admission she saw a woman with large, staring eyes and got the idea that the woman was mesmerizing her. The patient became terrified and felt that some terrible harm was impending. On admission she complained of weakness, anorexia and flushing. At first she exhibited no psychological symptoms, but a few hours later became acutely hallucinated, saw menacing faces at the window and made desperate efforts to escape from the ward. She was very apprehensive of impending death and was in a state of extreme terror. This attack lasted for one hour, when she suddenly became lucid again. During her stay of two days in hospital she had repeated similar attacks during which she had hallucinations, screamed for help and made vigorous efforts to escape. The onset and termination of these episodes was very sudden and in her quiet intervals she was rational, apologetic for the disturbance she had caused and showed insight into her condition.

In this patient psycho-neurotic symptoms definitely date from the time of operation, but there was an important psychological factor inasmuch as there had been long standing domestic infelicity. The operation probably acted as an exciting factor in her psychosis by establishing a sudden menopause.

General Conclusions.

A history of artificial menopause has been obtained in 3·8% of patients admitted to Broughton Hall. This proportion seemed high and led us to think that hysterectomy and double oophorectomy were a definite factor in the causation of mental disorder.

A review of our case material, however, rather dissipated this view and we found that in most cases of hysterectomy it was probable that the natural menopause is the important factor in the development of their symptoms.

With regard to cases of double oophorectomy, whilst patients who were admitted within two years of operation complained of the classical symptoms of the menopause, it was difficult to correlate the operation as a cause of mental disorder.

In many cases other ætiological factors were involved which determined the nature of the psychosis, as for example in the confusional, alcoholic and arterio-sclerotic groups.

In many, too, there was an antecedent history of neurotic symptoms and of various psychological stresses, the most common of which was domestic infelicity. In these cases the operation probably acted as an additional psychological stress (as in the case of D.Z.) or by precipitating a sudden metabolic disturbance which aggravated the preexisting psychopathic tendency.

NERVOUS DISTURBANCES IN THE NATURAL AND ARTIFICIAL MENOPAUSE.[1]

By CONSTANCE E. D'ARCY, M.B., Ch.M. (Sydney),
Honorary Surgeon, Royal Hospital for Women, Sydney; Honorary Gynæcologist, Saint Vincent's Hospital, Sydney.

EVERY medical practitioner is familiar with the woman patient of middle life who comes to the consulting room with a tale like this: "I feel perfectly well, but I have come to the time of life when something terrible has to happen to me, so I want you to advise and help me." Here is a fertile field for the labours of those who practise such arts as Couéism or Christian Science, for there is no doubt that autosuggestion is an important factor in stressing the emotional disturbances so common among women at the menopause. The term "menopause" strictly speaking should be applied to the time of cessation of the menses whether due to age or oophorectomy and the word climacteric denotes that period of adjustment with its physical and psychic phenomena which is commonly called "change of life." The climacteric may occur while the menses are still more or less regular and even while there is still profuse bleeding and on the other hand, the menstrual flow may have ceased for months or even years and the patient may still be subject to the symptoms which are associated with this time of life.

It is now generally accepted that most of these nervous disturbances are due to an alteration in the balance of the products of the endocrine system. The ovary begins to lose its function; if the correlated glands cease to act in like proportion, the woman passes through the climacteric without any unpleasant experiences. If, however, the ovary regresses, but other glands such as the thyreoid or pituitary or adrenal do not, but even perhaps act more freely than formerly, then the storm arises. And, considering that there may be combinations of hypofunction and hyperfunction amongst the sets of glands, it will be seen that a great variety of symptoms is likely to occur. Hypofunction and hyperfunction may alternate in the patient, a condition which renders it imperative for the medical practitioner to be on guard, if he is applying gland therapy to a given condition.

Some families have an instability of the ductless glands which may cause considerable disturbance to all members at critical times, such as puberty and climacteric, affecting in one member the thyreoid, in another the hypophysis, the pancreatic islets or other glands. Other more fortunate individuals or families have such a perfect adjustment of their endocrine system that it would take a very serious occurrence, such as a severe attack of one of the exanthems, to disturb the balance.

It would be well at this point to make a brief *résumé* of what is known or conjectured in regard to the action of the ductless glands, more especially in relation to the sex life of woman. Physiologists

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on July 28, 1927.

hesitate to speak with any degree of certainty on the subject of endocrinology, but while the laboratory workers are conducting their experiments, the clinician has made a start with gland therapy and in many instances results have upheld theories, while in a few cases accurate and scientific data have been collected. No doubt much that is now accepted, will later be changed in the light of greater knowledge.

The pineal gland which undergoes complete development in the first seven years of life, exerts an inhibitory influence in the development of the sexual glands and possibly on mental development. Tumours of the pineal gland, usually occurring in little boys and usually of the nature of teratomata, produce atrophy of the glandular elements and cause abnormal growth in stature and in hair and precocious sexual and mental development. In adult life the pineal gland does not seem to be of such importance. According to Frankl-Hochwart, "when in a young individual there is increase in stature and unaccustomed growth of hair, obesity, drowsiness, a premature genital and sexual development, with evidence of precocity of adolescence, pineal tumour must be thought of."

The thymus gland begins to regress at puberty, when the ovaries develope. The thymus is closely associated with calcium metabolism and has a dominating influence in the lymphatic system. Calcium metabolism is also affected by the parathyreoid glands, the removal of which produces tetany. These glands show increased activity in pregnancy. Tetany is known to occur in pregnant, parturient and nursing women, the attacks being very painful and, according to Newmann, being started by uterine contraction. In passing, I may mention that I have had experience of two cases of tetany in the puerperium.

There is a relationship between the thyreoid and parathyreoid gland—there is a partial hypertrophy of the parathyreoid glands after removal of the thyreoid.

The thyreoid gland has been the subject of larger and more intense study than the other ductless glands. The dramatic effect of thyreoid extract on cretins and in myxœdema was noted many years ago. A minor degree of hypothyreoidism is common in adult life and frequently escapes notice and is very easily amenable to thyreoid administration. It is significant that Graves's disease which is caused either by excessive action of the thyreoid or by a perverted function of the gland, is much more common in women than in men. Symptoms resembling Graves's disease are often seen at the climacteric. To quote Bandler, "the relationship between Basedow's disease and the female sexual sphere is indicated by the frequency with which this disease developes during the sexually active years." Amenorrhœa is a frequent symptom of the disease and the ability to conceive is diminished. The disease is unfavourably influenced by pregnancy. The thyreoid undersecretes in many cases, producing at first physical weakness, tendency to fatigue, diminished sweating, loss of hair, dry scaly skin, increase in weight, mental torpor, loss of memory and sometimes being associated with joint and muscle pains. This leads to an attempt at compensation which may possibly be carried too far, causing symptoms of hyperfunction with sweating, tremor, restless activity, loss of weight, tachycardia and even exophthalmos. And it is possible to have the two types of symptoms in the one patient. The thyreoid is the great activator for the glands. The administration of thyreoid extract has a dual action, replacing a deficiency and stimulating other glands. The hypophysis appears from modern investigation to be active from childhood upwards and to play a part in skeletal growth, mental and genital development and sugar tolerance. The anterior lobe stimulates growth during childhood and adolescence, but as soon as the epiphyseal ends of bones completely ossify, continued activity of the anterior pituitary produces acromegaly. A disordered action of the anterior lobe may cause dwarfism or gigantism with in either case genital infantilism. The latter symptom suggests association with the pineal gland.

In acromegaly there are pronounced changes in the ovaries and often in the female the mammary glands do not develope beyond the infantile stage. The posterior pituitary has specific action on unstriped muscle, causing it to contract. Its action in this regard is well known in midwifery and it is considered that it is the cause of many cases of dysmenorrhœa, each menstruation being a miniature labour. Its continued action on uterine muscle is said to maintain muscle tonus in that organ and it is counteracted by the *corpus luteum* of pregnancy and possibly by hormones from the trophoblast and placenta and by the mammary gland. This explains the so-called superinvolution of the uterus in nursing mothers. Women of acromegalous type tend to recurrent miscarriage, an accident which is also to be noted in certain types of women afflicted with adiposity and hypertrichosis. I know several patients of both types who have frequent miscarriages with no other demonstrable cause.

Women who suffer from headaches, with vomiting of the migraine type, due to hyperplasia or congestion of the hypophysis, as shown by enlargement of the *sella turcica,* have no attacks during pregnancy and lactation. This is, no doubt, due to the inhibitory power of the *corpus luteum,* trophoblast and mammary gland. Bandler writes:

> The anterior pituitary is vitally concerned with body growth and mental development. It is associated with strength, large or broad hands, the development of the jaws (we speak of a firm, hard jaw), with maturity of mind and its function is more in evidence in men than in women. Speaking in relative terms and in view of its relation to the posterior pituitary, it is a male gland, just as relatively speaking the thyreoid is a female sex gland. The posterior pituitary, related to the uterus and genitalia, plays relatively a greater rôle in its balance with the anterior lobe in women than in men. Its action is associated with the tender emotions and the sex instinct in women. Relatively speaking it may be called a female gland.

Cushing, the pioneer of surgery of the hypophysis, has probably made more valuable contributions to the knowledge of the function of this gland than any

other scientist. He tabulates the symptoms of hypopituitarism as:

A tendency to sub-normal temperature, dry skin, loss of hair, a slow pulse, a lowered blood pressure, asthenia, increased assimilation limits of carbohydrates, often associated with a tendency to adiposity, polyuria, psychoses and a tendency to epileptiform seizures. The malady is a polyglandular one and hence, in addition to hypophysis, may be helped by other glands such as the adrenal and thyroid.

At puberty changes occur which, if the hypophysis is unstable, may so alter the biochemical processes of the body that they border on the pathological. The rapid increase in stature during the adolescent period probably accounts for the occasional spontaneous glycosuria of this period. This is probably true also of pregnancy in which there is a transient physiologic hyperpituitarism.

The adrenal consists of two parts, the cortex and the medulla. The adrenal function is of the greatest importance during development, not only because it is essential to good health, but because it acts in the development of sex organs and is of tremendous importance in determining the reactions of a child as expressed in its emotions. An underactivity of the adrenals is responsible for langour, tired feeling, asthenia. The adrenal function seems to be specially related to the emotions of anger and fear. It is now known that fear in children plays an important part in the psychoses of later life. According to Bandler, the medulla of the adrenal glands responds to the stimulus of fear and the medulla *plus* cortex to the stimulus of anger. He holds that, if there is a predominant stimulation of the adrenal medulla, there are nervousness, instability, sensitiveness, blushing, fear, anxiety *et cetera*. If the adrenal cortex is unstimulated, the girl will show some of the characteristics of the male in the way of courage, absence of fear, decided fondness for manly sports and, though feminine in other ways, may be less sentimental.

Degeneration or disease of the adrenals produces Addison's disease. Pigmentation of the skin to the extent of *chloasma gravidarum* occurs in pregnancy due to disturbance of the adrenal function. This disturbance may be due to the cessation of function of the ovary.

A period of asthenia following childbirth, a fairly common clinical experience, is attributable to the continued underactivity of the adrenal gland associated with the compensative inactivity of the ovarian gland. It is suggested that ovarian gland (without *corpus luteum*) and adrenal medulla are correlated and relatively female, in the same way that testes and adrenal cortex are relatively male.

Bandler writes:

The ovaries are glands with an outer covering of germinal epithelium, within which is a stroma or interstitial tissue containing thousands of follicles. The ovaries thus produce an internal secretion, probably two different varieties and, in addition, the *corpus luteum*, which develops especially during pregnancy, produces a secretion perhaps of a different character, or at least of a more specific nature designed to stimulate the thyroid and inhibit the posterior pituitary tendency to bring about menstruation.

The ovaries function before the onset of puberty, determining the external sexual character, just as the testes determine the male characteristics in a boy. If the ovaries are removed before puberty, there is an onset of some of the secondary sex characteristics, such as the development of the mammary glands. If the ovaries are removed after puberty, there is not any alteration in the secondary sex character.

Development of hair on the pubis and on the axillæ occurs at puberty, but hypertrichosis may be due to excessive action of adrenal cortex and anterior pituitary and is seen in ovarian disorders and at the climacteric and to a less extent after removal of the ovaries.

The ovaries exercise trophic influences on the genital organs and when they are removed, the uterus diminishes in size, the mucous membrane of the vagina and vulva is somewhat altered in character. The ovarian secretion is responsible for menstruation. If the ovaries are removed, no amount of feeding with ovarian gland substance will restore menstruation. The first decidual changes in the uterus are produced by the ovaries, but the ovaries may be removed during pregnancy without interfering with the course of pregnancy or lactation.

The relationship between the ovaries and those other secretory organs which influence growth, is remarkable. Castration is followed by changes in the thyroid, thymus, adrenals, hypophysis. Removal of the ovaries causes an increase of the hypophysis. The menopause is associated with regressive changes in the internal secretory organs, especially the thyroid, but over-activity of the posterior pituitary may persist.

After castration, metabolism is much reduced. Removal of the ovaries never produces the positive characteristics of the opposite sex, but results in a certain fixation of an infantile type. The removal of the ovaries has almost no effect on the external genitalia, since they are trophically supported by the posterior pituitary.

If the ovaries are removed after a woman has had actual sex experience, her sex appetite is little altered, the posterior pituitary being the active agent in such a case. But if the ovaries are removed before psychic-sexual puberty, the sexual instinct is lost.

A study of the action and interaction of the products of the ovaries and other ductless glands will explain many of the phenomena of the menopause and to these must be added heredity and psychic effect of the various happy and unhappy complications of life. According to Sajous the ductless glands and the sympathetic ganglia communicate by nerves which connect with the somatic nervous system, the whole being called "the chromaffin system." Such a communication would explain the hot flushes both in the natural and artificial menopause. After contemplating some of the modern concepts of the endocrine system with the allocation of fear to one part of the adrenal and anger to another *et cetera*, we are reminded that our forefathers thought all rancour and hatred emanated from the spleen, that the liver was the seat of the dolours and the heart of the tender emotions,

even to the point of breaking in the love-lorn. Another generation may put all the present day suppositions in the scrap heap of broken hearts.

Bandler states:

Mental instability is the most distressing symptom associated with ovarian atrophy; the sense of apprehension, inability to control the temper, restlessness, state of depression, defects of judgment and memory, lack of self-control are frequent symptoms; intense headache, pain in the back of the head and neck, sudden flushes, sensations of pressure in the head, irregular digestion, irritability of the bladder, pain in the muscles; the majority of the symptoms are due to overactivity of the posterior pituitary, which overactivity occurs after cessation of ovarian function.

Probably the most frequent type of patient who comes to the consulting room, is the hypothyreoid. The increase in weight, due largely to unseen œdema, loss of memory and slow cerebration, tendency to drowsiness, undue susceptibility to cold atmospheric conditions all point to under-action of the thyreoid. The sense of orientation in space is likely to be lost in short attacks, a sensation which many women call giddiness for want of being able to describe the unpleasantness more aptly. A patient described the condition as waking up in the night feeling like Mahomet's coffin. Another said if the feeling came over her she had to grasp mother earth and even then she could not be sure just where she was. Another phenomenon associated with hypothyreoidism is the occasional extra systole in the heart rhythm. The individual is conscious of this abnormal rhythm and is even awakened out of sleep by it. A patient described the sensation as if a "wild beast leapt suddenly in my chest." Associated with these symptoms are pains in the joints and muscles, with definite rheumatoid changes. In this type of condition there is usually arterial hypertension with high systolic pressure readings. A woman may still have regular menses whilst these symptoms come on, so she fails to associate the symptoms with menopause and thinks the worst—that she has heart disease and that she is about to die. She keeps her fears to herself as long as she can and so fixes the idea more firmly in her mind, developing a state of depressions and apprehension. She sees in imagination the worst fears of a woman's life being fulfilled—namely, a stepmother for her children and this goads her to consult a medical practitioner, who will give her small doses of thyreoid after which the sun will shine again, the world will again be the only heaven human mind can understand and she will even rejoice in the restoration of her slenderness.

An almost universal symptom in women suffering from menopause disturbances is the greater or less degree of failure of memory. Women who have found the acquisition of foreign languages easy and who have made a study of a new language every five years or so, find they can no longer memorize new vocabularies and idioms. That this is a transient phase is instanced by the famous example of Queen Victoria, who acquired a new language—Hindustani—at seventy-five years.

The hyperthyreoid type suffer from sudden flushes with rapid pulse and palpitation of the heart. The flushes are often preceded by a creeping sensation in the skin of the limbs and are followed by sweating with sensation of heat and suffocation. I have seen a patient sweat so profusely that little pools of water have collected on the ground where the hands have been hanging down. Such patients show signs of restlessness, irritability, always "must be doing something" and are a little trying to relatives or subordinates, if they happen to have authority over employees.

As well as secretion of the thyreoid there is probably also over-activity of the adrenal medulla and posterior part of the pituitary gland. Such patients are treated by rest and as far as gland therapy is concerned ovarian extract, ovarian residue and perhaps adrenal cortex extract.

A smaller number of women suffer from asthenia with muscular weakness and loss of weight. These symptoms are comparable to the asthenia following childbirth and probably are due to degeneration of the adrenal as well as the ovary. Hypopituitary symptoms also occur with or without hypothyreoidism. It will be seen that every patient must be studied individually and if gland therapy is used, it must be adapted to individual requirements. Herein lies a danger in ordering mixed glands in tablet form, as put on the market by manufacturing houses. The damage may be more seeming than real, however, as so many of the gland extracts marketed seem fairly inert and so do no harm if no good. If disappointment is caused by the results of glandular therapy, it is always a wise measure to change the brand of product before discarding the method altogether, if the course of treatment seems reasonable.

An interesting feature of the climacteric is the transient recrudescence of sexual activity at this time. This is shown by the return to normal menstruation after a fairly long period of amenorrhœa, a scanty menses and the last baby of the mature mother.

Emotional disturbances are likely to be greatest in women who have rated high their physical beauty and sexual attractiveness. They see their beauty fading, their sex influence waning and they give way to despair or take to good works.

It is a common opinion among even well educated women that after the removal of the ovaries male characteristics appear, such as a beard and deep voice. All women view the possibility of a removal of both ovaries with the greatest horror and repugnance. They say when discussing the possibility before operation, first: "Shall I grow fat?" and next: "Shall I grow a beard and have a voice like a man's?" When reassured on the last point, a woman can even contemplate the possibility of fat with equanimity, for, although women will cry out about the injustice suffered by their sex and that man owns the earth, the greatest possible tragedy that the mind of woman could conceive would be that she should be converted into a man.

THE PREVENTION OF DISEASE IN INFANCY.[1]

By A. JEFFERIS TURNER, M.D. (Lond.), D.P.H. (Cantab.),
Brisbane.

OF the two functions of the medical profession, (i) the prevention of disease and (ii) the cure or alleviation of disease, in an ideal State the former would be considered the more important, for not only is the avoidance of morbidity a public interest, but also a very much greater lowering of mortality might be achieved, even with our present knowledge, by prevention of disease than by attempts at its cure. Unfortunately nine-tenths of the work of our profession is at present directed to the latter and this is very natural. The ordinary man is anxious for cure when sick and is willing to pay a high price for it or even for alleviation. But only exceptionally is he interested in prevention, more often he resents preventive control and he certainly declines to pay for it individually and is somewhat niggardly in paying for it collectively. Naturally the medical man, having to provide for himself and his family, concentrates his work in the direction which not only brings him the gratitude of his patients, but gives him an income.

I do not propose to discuss the difficulty here pointed out. It is a large problem. But I propose to show how the difficulty is being overcome in one special case, that of the reduction of infantile mortality. Here prevention is a comparatively easy problem, for we have a sufficiently full knowledge of the causes of the great bulk of this mortality; while the treatment of the sick infant is difficult, tedious and often disappointing. The causes may be traced to want of knowledge and the remedy is education of mothers and nurses in the hygienic management of infants. To educate a whole population would be quite impracticable, if the medical profession were unassisted, but with the help of suitably trained nurses it is not only possible, it is actually being accomplished. This is the work of infant welfare centres or baby clinics, as they are called in this State. Let it be clearly understood that these are not places for the medical treatment of sick infants, except in the comparatively few who, not having medical attendants of their own, are seen by the doctor attached to the clinic. They provide a nursing service, not a medical service, except in the few instances mentioned. Few mothers will take their babies to a doctor unless the latter are sick; all mothers are invited to bring their new-born infants to the clinic weekly to have them weighed and to receive advice as to their feeding and management. The nurses, already doubly qualified, have gone through a special course of practical and theoretical instruction followed by an examination. Their duties are to instruct the mothers carefully and patiently weekly or even daily by actual demonstration as well as precept, in their homes if it is impossible for them to come to the clinic. Their efforts are supplemented by freely distributed leaflets and pamphlets, by lectures and newspaper articles. This system of popular education has been most developed in New Zealand by twenty years of intensive propaganda by the New Zealand Society for the Health of Women and Children, initiated by Sir Truby King. While we may not approve every detail of their system, only the blindly prejudiced can fail to recognize the great results achieved. New Zealand has attained a relatively high standard of intelligent interest among its population in infant care and welfare and its infantile mortality for the first year of life is now 40‰, the lowest in the world. That this low mortality is due to any climatic advantages is a baseless delusion. The second place is claimed by Queensland which had in 1925 a mortality of 45‰, but for the last few years averages 50‰. Most of the New Zealand mortality occurs in the winter months from respiratory infections which are not easily preventible. Most of our Queensland mortality occurs in the summer months from dietetic causes and diarrhœal infections which have been reduced in New Zealand almost to a minimum. Owing to our climatic advantages, when we have attained to the New Zealand standard, our mortality should not exceed 35‰. On an average of about 20,000 annual births this would mean the saving of 300 infant lives every year, a saving which is certainly practicable.

This result will come about more quickly with the cooperation of the medical profession. Already a large and increasing number of general practitioners are making use of our baby clinics and finding them helpful, but there is still among many an attitude of aloofness and suspicion based on a want of knowledge of their methods and objects. There is no reason, but merely prejudice, in the view that these clinics are rivals and not helpers, that they give medical and not nursing service, that any medical man who refers a case to them is in danger of losing his patient. The nurses do not prescribe medicines and have no medicines to distribute. The only drugs they are permitted to use are simple aperients, lotions and ointments which may be fairly classed as domestic remedies. They are instructed and are most anxious to work in conjunction with the patients' medical advisers. The State has provided specially skilled nurses to assist every medical practitioner in a difficult part of his practice, which cannot be properly attended to without nursing assistance, and it has done so free of cost to patient or practitioner, for the reason that the lowering of infant mortality is a State interest and not merely a matter of private concern. The local practitioner attached to the clinic is an effective check on any individual nurse who may be inclined to exceed her province, and is a great help to the nurses in dealing with patients who have no regular medical attendant. In no case will a nurse refer any patient sent by a medical practitioner to the clinic doctor, unless by that practitioner's direction. So far from risking the loss, he has indeed tightened his grip of his patient. If a medical man is reputed to be hostile to the clinic, some of his patients will go to it nevertheless

[1] A post-graduate lecture, delivered at Brisbane, August 5, 1927.

without his knowledge and will not inform the nurse that they are his patients. Some of these may be diverted to other practitioners by the mothers they meet in the waiting room. The aggrieved practitioner blames the clinic; if he were wiser, he would blame his own foolish policy.

The training of our maternity nurses is being reformed. In future every maternity nurse will be qualified to induce breast feeding in every case in which it is not forbidden for medical reasons. She will be instructed in the technique of milk expression, test feeds and complementary feeding. It is not too much to ask that those in general practice should keep themselves informed in these matters. The number of calories needed by a baby of a certain weight or age and its equivalent in milk or modified milk are very simple problems as compared to the calorie feeding of diabetics. Our nurses are instructed in them; they should be equally familiar to medical practitioners. It should not be beneath the dignity of a medical man to read such works as "The Parents' Book" by Dr. Margaret Harper or the writings of Sir Truby King. We were not taught everything in our medical curriculum, but this does not excuse the prescription of diets on which an infant can do nothing but starve, or the recommendation of patent foods which are inferior substitutes for modified cow's milk. The methods of modification of cow's milk by scalding, moderate dilution, the addition of sugars and fats, whey, lactic acid or thorough peptonization are no mysteries. Above all, there is no excuse for advising or allowing the weaning of a young baby without the most careful consideration, knowing that to do so is to increase seriously its chances of early death.

Reports of Cases.

HÆMORRHAGE FROM A CORPUS LUTEUM.[1]

By A. VERBRUGGHEN, M.B., Ch.M. (Sydney),
Guyra, New South Wales.

I WAS called out at 4.30 p.m. to see a patient eight miles out in the country.

On my arrival the patient was found lying in the dorsal decubitus well propped up on pillows; her face was a sallow, dirty grey colour. She gave me the impression of being afraid to move.

Her symptoms dated from that morning at 8 a.m.; previous to this she had been quite well. She had had colicky pains all over the abdomen, but particularly in the right hypochondrium. The pains were sufficiently severe to make her stay in bed. She had another bout of pain about 3.30 p.m. and her husband sent for me.

She complained of pain in the upper part of the abdomen and of a feeling of something peculiar in the lower part of the abdomen. The pain did not trouble her much if she lay still, but any movement caused a spasm of pain. Her last menstrual period commenced on February 21 and ended on February 25, 1927, that is, it lasted the normal four days. (She had a child, four and a half years of age, with whom I confined her in a normal confinement.) Her bowels had acted twice that day and on each occasion she had had severe pain in the rectum; this pain had lingered on during the rest of the day, though it was not so acute. She had vomited in the morning half an hour after she first felt unwell, about 8.30 a.m.. She had no headache, giddiness, palpitation or the like, although she had felt nauseated on one or two occasions during the day. She had not eaten anything, but she had drunk tea and water at intervals.

Her principal trouble was the pain in the right hypochondrium and epigastrium which she noticed when she took a deep breath or when she moved to sit up. Her secondary trouble was the feeling of something peculiar in the lower part of the abdomen with this pain referred to the rectum. There was no history of trauma.

Examination revealed that her pulse rate was 80 in the minute, its tension was low, the volume was medium, the rhythm regular, the respiratory rate was 24 and the temperature taken in the axilla was 36·7° C. (98° F.). The tongue was moist and slightly furred.

I then asked her to lie flat so that I could examine her abdomen, but when she raised herself for me to remove the pillows she fell back in a spasm of pain. The pain was in the right hypochondrium. I allowed her to remain propped up and I put my hands on her abdomen in the right hypochondrium. The very slight pressure of my hands made her cry out and hold herself rigid. This spasm of pain lasted about two minutes. The pain was referred to the right shoulder.

I did not persevere with her abdomen for I could feel nothing. Her abdomen did not become rigid until the pain came on. For a few seconds after putting the hands on her abdomen it was quite soft. An examination of her chest revealed nothing abnormal.

I gave her a hypodermic injection of morphine, 1·5 milligramme (one quarter of a grain) and had her taken by the nurse to hospital in town. My diagnosis was that in all probability she was suffering from a gall stone colic with an impacted stone in the cystic duct.

I saw her again at the hospital at 7.30 p.m.. She still had the pain when she moved and when she took a deep breath and the pain was still referred to the right shoulder region. I then thought there might be some irritation of the diaphragm and I again examined her chest and found nothing abnormal. On this occasion her abdomen seemed more rigid. On vaginal examination she was very tender and it was possible to feel only the *os*, which pointed downward and forward, and my attempt to reach the fornices was resented. The uterus appeared fixed in an anteverted position and the slightest pressure on the *os* caused the characteristic pain in the upper part of the abdomen. After this examination I did not know what to think. However, I decided to open the abdomen immediately and to make another vaginal examination when the patient was under the anæsthetic.

My differential diagnosis was:

(1) Impacted stone in the cystic duct with an impacted ovarian cyst.

(2) Ruptured gastric ulcer with acute pelvic peritonitis.

(3) Impacted ovarian cyst.

(4) Pelvic hæmatocele of fairly recent occurrence.

(5) A large swollen pelvic appendix.

There were other possibilities which I did not take into consideration, such as intermittent hydronephrosis from a floating kidney, pus tubes, stone impacted in the ureter, acute hæmorrhagic pancreatitis, in fact all causes of acute abdominal pain.

We operated at midnight and Dr. J. S. Harris gave ether by the closed method. When she went to the table her pulse rate was 84 and her temperature 37·1° C. (98.8° F.). During the few hours she had been in hospital her temperature at one time was 37·6° C. (99·8° F.).

On vaginal examination under the anæsthetic no tumour was found in the pelvis and the uterus could then be moved about fairly freely. The right ovary was found to be a little enlarged.

It was decided to make a small median suprapubic incision to explore the pelvis and find out the state of the peritoneum.

[1] Read at a meeting of the Northern Districts Medical Association on June 15, 1927.

The skin, fat and muscle oozed a great deal and the peritoneum bulged up into the wound and presented a purple colour. Fearing that this might be a coil of bowel I lost time in getting the peritoneum open. As soon as the peritoneum was opened we were met with a most alarming gush of dark blood. The blood poured out and completely obscured the wound and the towels and ran off the table to form a large pool on the floor. It lasted at least thirty seconds. When the first gush had subsided a little the incision was rapidly enlarged and the hand introduced into the pelvis to find the then expected ruptured tubal pregnancy. The uterus was identified at once, but no tumour on either side of it. The right tube and ovary were brought up through the blood to the wound and inspected and apart from a bleeding point on the ovary, were found to be normal. The ovario-pelvic ligament and the right broad ligament between the uterus and the ovary were clamped. The left tube and ovary were then felt for and brought up to the surface and inspected and they were normal. Unfortunately the left broad ligament was torn in the manipulation and the left ovary and outer half of the left tube were removed. We had no time to spare to repair the damage. On removing the clamp on the right ovary the bleeding point again started to spurt. So we removed the right ovary and the lateral part of the right tube. For some minutes after the gush of blood Dr. Harris kept a record of her pulse and after the ovario-pelvic ligament was clamped on the right side, her pulse gradually settled down from 120 to 88, where it remained for some hours after the operation.

We mopped up a great deal of blood out of the recto-genital pouch and some of it was in small dark clots. The clots were very dark and it was obviously old blood. No other bleeding point could be found and a large gauze sponge was packed down into the damaged left broad ligament for safety. A large glass drainage tube was put down into the pouch of Douglas and the upper part of the wound was closed. We felt very uncertain as to how we stood with regard to the condition of the patient.

The patient was hurried off to bed. The foot of the bed was raised high and she was well packed up with hot water bags. Two cubic centimetres of Parke, Davis "Hæmostatic Serum" were given and two pints of saline solution were run into the rectum. Her pulse rate was then 88.

In twenty-four hours the patient developed a condition of secondary hæmorrhagic shock and had to be treated accordingly. The pad was removed in thirty-six hours and there had evidently not been any bleeding since it was put in. On the fourth day there was a profuse peritoneal reaction in the shape of a copious discharge of blood-stained peritoneal fluid through the tube and out of the lower part of the wound. The discharge was thin and really only tinged with blood. The tube was removed when all discharge had ceased on the eighth day. The wound healed up well.

The patient made a slow recovery and for five weeks she had a nocturnal temperature of between 37·2° and 37·8° C. (99° and 100° F.). Some difficulty was experienced in getting a satisfactory action of the bowels. On account of her temperature bimanual examination was carried out on the fourteenth day, but the parts appeared normal.

She came to see me on May 14, three months after operation and on bimanual examination she was normal in every respect. She said she felt well and strong and wanted to know if I would permit her to do her own housework. She had then been taking 0·3 gramme (five grains) of Parke, Davis and Company's whole ovarian extract for four weeks.

Comment.

I report this case at length because I consider it to be of considerable interest on account of its rarity. The reason I was very dissatisfied with the operation was that I was not at all satisfied that I had the bleeding point when I had finished. I had never heard of a bleeding point on the ovary filling the peritoneal cavity with blood and there is no mention of actual cases in my books of gynæcology. Two books mention it. Three do not. One states that a ruptured Graafian follicle may bleed and cause a pelvic hæmatocele. The other contains reference to "apoplectic ovary" and the "hæmorrhagic *corpus luteum*," which may cause diffuse intraperitoneal bleeding. The writer, Stevens, further states that this type of case is now a clinical entity.

On examination of the right ovary there was a little cavity about the size of a small pea and the edges were gaping. No other abnormality was found. I must say that at the operation the ovary was not thought to be the whole cause of the trouble, but was removed because it was the only bleeding point that could be seen. Most unfortunately of all, the ovary was not kept as a specimen for demonstration.

In view of what was found at operation and of the doubtful preoperative diagnosis it is interesting to recall some of the symptoms and signs in this patient.

In the first place her peritoneum was filled with blood and there were only two signs and no symptoms that suggested it. The two signs were tenderness of the cervix with relative fixity of the uterus and the temperature of about 100° F.. Tenderness of the cervix is regarded as an important sign in the diagnosis of pelvic hæmatocele.

Her principal symptom was pain in the right hypochondrium and epigastrium on moving or taking a deep breath. I take it that, with the peritoneal cavity already almost completely filled with blood, anything that would increase the tension within the abdomen would cause pain. The descent of the diaphragm when the patient took a deep breath or the contraction of the abdominal muscles when she tried to sit up, would increase the intra-abdominal tension. The pressure of the examining hand would have the same effect. The pain on defæcation was caused by the pressure in the pouch of Douglas of a large quantity of blood free in the abdomen. The uterus was relatively fixed by the small blood clots which were removed from the pouch of Douglas. She had evidently bled slowly into her peritoneum, as shown by the old blood, for some time before her system finally revolted. I have looked the matter up and it appears that between six and eight days after the last period ceased ovulation occurs and the *corpus luteum* begins to form. Ovulation means the setting free of an ovum through the bursting of a Graafian follicle and in all probability it was from this time that hæmorrhage started. On making the calculation I find that her period ended on February 25 and six to eight days later her Graafian follicle ruptured. That brings us to March 3 or 5 and on March 14 her abdomen was opened. In other words internal hæmorrhage had probably taken place for from ten to twelve days from this small spurting vessel in her right ovary. This explains the old blood that was found in the recto-genital pouch.

The oozing from all cut surfaces was very pronounced at the operation and this may have been due to the fact that she was a bleeder and the fact of her being a bleeder may have caused her ovary to bleed. Or the oozing from cut surfaces may have been secondary to a large loss of blood.

Another thing is the injury to the left broad ligament. There was no excessive force used and I consider that the tissues were unusually fragile owing to the prolonged presence of blood in contact with them.

Again I must repeat that I should not have gone into all this perhaps unnecessary detail were it not for the fact that these cases are excessively rare. I should very much like to hear the experiences of others who have had to deal with this type of condition and I should also be pleased to answer any questions on this case to the best of my ability.

As evidence of the great rarity of diffuse intraperitoneal bleeding from a ruptured *corpus luteum*, I can quote the following amusing incident. On mentioning to a well-known gynæcologist of some twelve or fifteen years' standing that I had operated on a patient with diffuse intraperitoneal bleeding from a ruptured *corpus luteum*, he gave me a playful dig in the ribs and said: "Come on now, don't make it too hot, old man."

It has been suggested that the lesion on the ovary was a small hæmorrhagic cyst. The lesion may have been as suggested, but it was very small for a cyst and corresponded more in appearance to a *corpus luteum*.

FRONTAL LOBE ABSCESS.[1]

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AND

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Clinical History.

A MALE, aged twenty-one years, presented himself on January 25, 1927, with a history of headache and vomiting for a period of three months, subsequent to a head cold.

Six weeks after the onset vision had become impaired, followed shortly by photophobia and vertigo, not of vestibular type.

On examination his headache was intense and was definitely located over the right side of his forehead. He was emaciated and extremely sallow. His pulse rate was 60 in the minute and his temperature 36·5° C. (97·8° F.).

Cerebration was slow, but his intelligence was fairly normal and his memory was good. There was definite photophobia with complete paralysis of the left abducent nerve and a left facial paresis. Examination with the ophthalmoscope revealed double papillœdema. On lumbar puncture the cerebro-spinal fluid was found to be clear and under considerably increased pressure, otherwise examination of the nervous system revealed no abnormality. The leucocyte count was 17,000 per cubic millimetre and the Casoni test yielded no reaction.

Skiagrams of the accessory sinuses of the skull revealed abnormal opacity of the right frontal sinus, but clinical examination revealed no active disease in this or any other sinus.

On the following day the patient became comatose, the pulse being feeble and the rate 130 per minute. There was flaccidity of the muscles of the left arm and face, but not of the left leg or thigh muscles.

Deviation of the head and eyes to the right was present.

A trephine hole 1·25 centimetres (half an inch) in diameter was made in the right frontal bone midway between the right eyebrow and the hair of the scalp. A few filmy adhesions were found between the *dura mater* and pia-arachnoid. Pus was withdrawn through an exploratory needle. The needle track was then dilated and a glove drain inserted. About two hundred and forty cubic centimetres (eight ounces) of pus were slowly evacuated. Pus from the cerebral abscess was reported to contain *Staphylococcus aureus* on culture.

Five days later his general condition had improved greatly and he was clear mentally. Much cerebro-spinal fluid continued to escape from the wound and portion of the abscess cavity wall, resembling a cyst, was extruded.

On March 30 secondary suture of the wound of the forehead was undertaken. A small piece of granulating cerebral tissue was pared off the centre of the wound, revealing a cavity which was very extensive, the probe passing in over five centimetres (two inches). The skin edges were separated from the underlying bone, pared and united. A wick drain was inserted. Cerebro-spinal fluid ceased to drain in a week and the patient was discharged on April 21 with a healed frontal scar and no evidence of cerebral hernia.

On June 28 the patient returned to the country, looking well and mentally alert. He was almost totally blind in the right eye in which there was an advanced secondary optic atrophy.

Comment.

The ætiology of the cerebral abscess in this case is a matter for conjecture. The opacity of the right frontal sinus in the skiagram with normal intranasal findings on clinical examination suggested a sinusitis at some time in the past which had become well and required no further treatment. And such was most probably the origin of this frontal lobe abscess with neither stalk, sequestrum nor extradural abscess in its track. On the other hand, however, some slight degree of frontal sinusitis could have been present without any intranasal evidence. Moreover there was elicited a history of severe injury above the right supraorbital ridge by a swinging gate four years ago, in which the anterior pole of the right frontal lobe, being a point of *contrecoup*, may have been involved. The absence of any positive intranasal findings and the patient's desperate condition at the time of operation would seem to have justified the approach through the frontal eminence which is a quick route and a surgically clean site, but in the presence of any active sinusitis such an approach must be regarded as but a preliminary to the external radical frontal sinus operation and a thorough investigation of its posterior confines. In either case a quiescent abscess in this "silent area" of the cerebrum may have existed for an indefinite period, but that an abscess of such dimensions was coexistent with life is worthy of note.

In view of the likelihood of recrudescence in such cases this patient will be kept under observation for a prolonged period.

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on June 9, 1927.

ACUTE ALBUMINURIA SETTING IN FORTY-EIGHT HOURS BEFORE LABOUR.

By J. E. FOLEY, L.R.C.P. and S. (Edin.),
Cowra, New South Wales.

MRS. H., aged twenty-three years, *primigravida*, was seen by me on the night of June 21, 1927. At the time she was seemingly in normal health. She had been under observation for some months and regular examinations of her urine had been made. The last examination was made on June 18, when no albumin was present.

On the night of June 22 she awoke with a throbbing headache affecting the temples and forehead, getting steadily worse and becoming fixed in the occiput. By 10 a.m. the following morning the headache was intense and she complained of severe epigastric pains with flashes of light, at first in the left eye and then in both eyes. She was admitted to hospital. Examination revealed a full bounding pulse with a rate of 85 to the minute, a clean tongue, a mental condition which was quite clear, and no œdema of hands, feet or vulva. She complained of pains in the lumbar region. The patient said her face felt full, but there were no evident signs of œdema. The systolic blood pressure was 120 millimetres of mercury. A specimen of urine, sixty cubic centimetres (two ounces), passed at 10.30 a.m. was examined. Its specific gravity was 1022, it was acid, the colour was normal, albumin was found when the urine was boiled and Esbach's method revealed 0·7% albumin. This was all the urine passed since bedtime the previous night.

Large linseed meal poultices were applied to the loins and the stomach and bowels were washed out. Sixty grammes (two ounces) of sulphate of magnesia were introduced by stomach tube. There had been no previous constipation. The bowels were freely moved by 3 p.m., and three fluid motions were passed between this hour and 7 a.m. the next morning (June 24).

Definite labour pains set in at 2.30 a.m. on June 24 and continued until 7.45 p.m., when the patient was instrumentally delivered of a four kilogram (nine pound) male, living infant.

Urine in small quantities was passed at the time the bowels moved. A catheter specimen obtained at 11.30 a.m. on June 24 measured thirty cubic centimetres (one ounce) total quantity, was highly coloured and contained almost three-quarters of Esbach tube of albumin. Microscopical examination of urine revealed granular casts. Headache was intense up to 6.30 p.m., when it ceased almost immediately after the rupture of the membranes. The quantity of amniotic fluid was not excessive. After delivery there was less hæmorrhage than usual.

The patient's condition on the forenoon of June 25 was that of a normal woman after parturition. A catheter specimen of urine, one hundred and eighty cubic centi-

metres (six ounces), obtained on June 25 was acid, rather dark in colour, had a specific gravity of 1022 and contained 0·6% albumin, Esbach.

During the next twenty-four hours the patient passed a litre and a half of urine. A catheter specimen examined on June 26 was very clear, its specific gravity was 1020; it was acid and contained a very slight trace of albumin, Esbach. Two and a quarter litres of urine were passed to 10 a.m. on June 27. A catheter specimen contained no albumin and appeared quite normal.

The patient continued normal throughout her puerperium and was up on the tenth day.

The points of interest were:

(*a*) The sudden onset of albuminuria and its amount.
(*b*) The absence of œdema.
(*c*) The normal blood pressure.
(*d*) The coincident relief of headache with the rupture of the membranes.
(*e*) The quick and complete return to normal.

BRONCHOPNEUMONIA SIMULATING LARYNGEAL DIPHTHERIA.[1]

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Newcastle, New South Wales.

Clinical History.

THE patient, aged two years and four months, was admitted to the hospital in the early part of the current year with a history of having been ill for two days prior to admission with a sore throat. His breathing had become distressed the night before admission. He was sent in by the family practitioner with a diagnosis of laryngeal diphtheria. On admission it was found that his clinical appearance substantiated this diagnosis, with recession present over the lower intercostal spaces and in the substernal angle. No sign of membrane was present in the throat, although the pharynx and tonsils were somewhat injected. The heart sounds were rapid, but of good quality. The breath sounds in the chest consisted solely of a respiratory stridor conducted from the pharynx. No abnormality was found in the abdomen. Some three hours later it was found necessary to perform tracheotomy in order to relieve the child's dyspnœa. This gave the patient temporary relief, but the improvement did not continue any longer than three hours. The child by this time had become bluish grey in colour and very little air was passing through the tracheotomy tube. The child died one hour later.

Post Mortem Examination.

Post mortem emphysema of the neck and of the mediastinal tissues was present. Both lungs contained dark patches on the surface which were solid on section. The trachea was slightly injected. Swabs were taken from the bronchi of both lungs and on culture the bacillus of Friedländer was found to be present. The cause of death was therefore bronchopneumonia and tracheitis.

Comment.

During an experience with over several hundred children treated in the diphtheria ward it has been noticed that occasionally patients have been admitted with signs of distressed breathing present which, although clinically very like that of laryngeal diphtheria, has been accompanied by small clinical signs leading me to suspect that the patients were suffering from virulent bronchopneumonia. The safe precaution has always been taken of treating these patients as though they were suffering from diphtheria with warm steam tents and large doses of antitoxin. Conversely we have had patients admitted to the children's ward with a diagnosis of bronchopneumonia and examination has revealed the presence of Klebs-Löffler bacillus. In these cases the early administration of antitoxin on the mere suspicion of diphtheria being present would have been a wise safeguard. The temperature and pulse rates are generally useful guides in the differential diagnosis between the two conditions, the temperature being fairly low in diphtheria and the pulse rate elevated.

In the case mentioned above the discovery of Friedländer's bacillus in the lungs is of great importance and shows that this bacillus which is commonly termed the bacillus of pneumonia or the pneumobacillus to distinguish it from the pneumococcus, is capable of producing a very virulent type of bronchopneumonia. Furthermore this type of bronchopneumonia sometimes exhibits certain characteristics difficult to distinguish from the symptoms and signs produced by laryngeal diphtheria.

The specimen exhibited consists of the lungs of a child who was admitted with a diagnosis of laryngeal diphtheria, but was subsequently found to have a very virulent type of bronchopnuemonia and who died within twenty-four hours of the onset of the illness. Mottled and inflammatory patches of bronchopneumonia may be seen scattered over the lobes of the lungs. Treatment for patients with virulent bronchopneumonia of this nature consists mainly of stimulation and the routine of pneumonia nursing. Oxygen is very valuable, if given early, and also adrenalin in doses of 0·06 to 0·3 mil (one to five minims) of one in a thousand solution given every three or four hours.

[1] Read at a meeting of the Newcastle Hospital Clinical Society on June 2, 1927.

Reviews.

INVESTIGATION OF THE CEREBRO-SPINAL FLUID.[1]

SINCE Quincke some thirty-five years ago first explored the spinal canal with a needle, the term lumbar puncture has been made to stand for a whole world of pathological research.

Into a small volume of two hundred and forty pages Professor Pappenheim has compressed the best of what is known today of the nature of the cerebro-spinal fluid in health and in disease and of the many uses of lumbar puncture.

He begins with a short reminder of the anatomy of the parts to be explored, the kind of needle he has found the most useful and the details of approach. Curiously enough there has crept into the text here a blunder that is repeated twice in the same chapter.

In mapping out the exact intervertebral space he is about to pierce, he takes as his landmark the "*Spina iliaca posterior superior*" and on the line joining the right and left spines which he makes to fall just above the fourth lumbar vertebral spine, lies the puncture point. Of course, he means the line joining the highest points of the iliac crest.

A brief discussion of the source of the cerebro-spinal fluid leaves the reader with the impression that the author favours Mestrezat's dictum that it is a "dialysate of the blood serum through specific epithelium (of the chorioid plexuses)."

Those who do lumbar punctures in the surgery and send the patient home in an hour or two, would do well to read the chapter on the dangers of lumbar puncture. While Pappenheim is not in any way squeamish about lumbar puncture, he stresses the bad after-effects that are not at all uncommon—from severe headache to a more or less meningeal syndrome. He deprecates doing a lumbar puncture in a haphazard way.

What importance the author places on the pressure of the cerebro-spinal fluid may be gauged from the fact that he devotes three chapters to its consideration. He would make the taking of the pressure a routine in all lumbar punctures. Certainly its omission may frequently lead to errors of diagnosis, prognosis and treatment. Details of how to make sure of correct pressures and their interpretation are given.

Passing to the chemical composition of the cerebro-spinal fluid, he speaks of the cerebro-spinal fluid content "balance" as might be done of the plasma "balance" of the blood, the exact proportion of each ingredient being necessary to health. It is open to question whether he is entitled to

[1] "Lumbar Puncture," by Martin Pappenheim, M.D., translated by George Caffrey; 1925. London: John Bale, Sons and Danielsson, Ltd. Demy 8vo, pp. viii + 248. Price 15s. net.

state for example that severe headache is the usual accompaniment of lowered calcium content in the cerebro-spinal fluid and that relief follows the taking of calcium by the mouth. The diagnostic value of the alterations in sugar and salt is duly emphasized and confirmed. He would watch closely the cell element from time to time for alteration in form and type of individual cells, emphasizing this change to be of general value in following the course of the disease. He has discarded the French method of counting "fields" for the counting chamber and gives detailed steps for accurate counting as well as the staining methods which he uses for detecting changes in cell structure from time to time.

While the author puts Nissl's modified Esbach's method of estimating the total protein content first and relegates Mestrezat's "diaphanometric" method to a less important place, the latter is more widely used in England as the standard laboratory method and is as accurate as it is simple. In spite of the author's recommendation of Pandy's carbolic method of globulin detection the Nonne Apelt ammonium sulphate test still holds pride of place.

Professor Pappenheim devotes two whole chapters to the discussion of Lange's gold colloid reaction. Owing to the difficulty of making and keeping a solution that is above suspicion, many substitutes have been tried for the gold, for example Emanuel's and Kafka's mastic, but the author has found them all either not simpler or less reliable and in spite of its occasional vagaries in disseminated sclerosis, epilepsy *et cetera*, no investigation of the central nervous system, when syphilis is suspected, is complete without the use of Lange's test.

His comments on the nature of the Wassermann reaction are full and enlightening. He insists on the Hauptmann method of investigation, that is with increasing volumes of cerebro-spinal fluid, maintaining that in cerebro-spinal syphilis and in *tabes dorsalis* no reaction is produced with the lower volumes in a large number of cases. Here, again, as in the Lange's gold colloid test, the newer and easier substitutes for the complement fixation method of Wassermann, such as the Sachs-Georgi precipitation test, do not in his mind displace the older test. He doubts if any practical value, however theoretically intriguing it may be, will result from Weil and Kafka's hæmolysin test.

Pappenheim's closing chapters sum up the results of the previous discussion of methods, pathology *et cetera* under the title "Diagnostic Importance and Therapeutic uses of Lumbar Punctures."

At the outset the author righly deprecates that lumbar puncture findings should be expected to replace all (or any) of the other diagnostic considerations in the clinical field. Indeed, he goes so far as to state that "it is generally impossible to form a clinical diagnosis on spinal fluid findings alone," but claims not unreasonably that there are few inflammatory or degenerative changes of the central nervous system whose diagnosis may not be clinched by lumbar puncture and further, that no observation of cranial injury can be effectively carried on without frequent lumbar punctures for the detecting of changes in pressure and signs of possible sepsis.

He points out, in passing, that this branch of chemical research has suffered from a bad nomenclature and while, for example, in meningitis, Schott-Müller's classical division is based on pathological and ætiological consideration, he considers that the nature of the fluid might well be taken as a basis of naming and would introduce such (somewhat doubtful) names as *meningitis purulenta infectiva* and *meningitis purulenta asceptica*.

Syphilis of the central nervous system in all its bearings, its form, its response to treatment has been made more understandable by lumbar puncture findings and by modern exact methods of lumbar puncture examinations consideration of the maladjustment of the cerebro-spinal fluid "balance" in encephalitis, tuberculous meningitis and other inflammatory conditions, is being undertaken by investigators of world-wide repute. The Nonne-Froin compression syndrome is instanced as an exact piece of diagnostic work.

Pappenheim's chapter on the therapeutic uses of lumbar puncture is an eye-opener. To anyone accustomed to associate the simple withdrawal of cerebro-spinal fluid as a remedial measure in inflammatory and congestive conditions, it is somewhat disconcerting to read of beneficial results in such widely differing states as enteric fever, whooping cough, sciatica, jaundice, asthma, polycythemia and chronic nephritis. As a vehicle for medication its uses seem to be equally unbounded, varying forms of medication ranging from bromide in tabetic lightning pains to strychnine in poliomyelitis. The chief interest in this section, however, is in the full discussion on thecal anti-syphilitic treatment. While commending the method of Swift and Ellis of giving salvarsanized serum by the thecal route, he points out that it is almost impossible to be sure of asepsis. From a recent Australian experience we can endorse this view. Three successful and beneficial injections of salvarsanized serum in the same patient by the cisternal route (Sir James P. Stewart's method) were followed by a fatal result on the fourth puncture. So the author turns with greater comfort to Gennerich's successful introduction of "Salvarsan" directly into the cerebro-spinal fluid. The method of administration is set out in detail and should stimulate research in that direction.

Dandy's work in ventriculography comes in for very favourable review. The leanings of the author are, however, in favour of the indirect ventriculography, that is introduction of air by the thecal route, a method which Bingle has made peculiarly his own and which he calls encephalography.

Our experience is that while it is possible to obtain ventriculographic pictures by the thecal route equal to any of Dandy's by the direct ventricular puncture, there are occasions when the air fails to lodge anywhere but in the subarachnoid space generally, even in the absence of any pathological obstruction to its passage *viâ* the foramina of Magendie and Luschka. The author gives in great detail the method he uses in doing a *cisterna magna* puncture. We prefer Sir James Purves Stewart's method as being simpler, more exact and not less safe. We would certainly not follow the author in doing a cisternal puncture without a local anæsthetic.

It is hard to understand the omission in a book of this kind of Sicard's "Lipiodol" work in spinal investigation.

No book of this kind would be complete without a bibliography. Pappenheim's reference pages leave nothing to be desired in that direction.

Of this book it may be said that no one interested in neurology can afford to be without it.

GUY'S HOSPITAL REPORTS.

THE April, 1927, number of *Guy's Hospital Reports* has come to hand. It contains many articles of value. Dr. H. W. Barber discusses the relationship of oral infection to diseases of the skin. He classifies the diseases of the skin which may be caused directly or indirectly by oral sepsis, and emphasizes the importance of studying the metabolism, the diet, the mode of life and surroundings of patients with chronic infective diseases. In an article on achalasia of the cardia Dr. G. W. Rake discusses the relationship of the condition to the ganglia of Auerbach's plexus. Mr. E. G. Slesinger records the results of peri-arterial sympathectomy in nine patients, six of whom were subjected to bilateral operation. In an interesting article on acute intestinal obstruction Dr. Bernard G. Schofield brings forward experimental evidence to show that the symptoms of intestinal obstruction are due to the absorption of a soluble toxin through the portal circulation. He discusses the factor favouring this absorption and suggests lines along which therapeutic measures should be directed. Dr. J. M. H. Campbell has investigated the pulse rate in health and disease. He shows that estimation of the pulse rate after graduated exercise is of use for following objectively changes in the same patient from time to time and for judging the disability of patients with heart disease and for deciding the amount of work on exercise which they should attempt. Interesting case reports include one of acute suppurative gastritis by Dr. Donald C. M. Ettles, one of latent *carcinoma ventriculi* by Dr. C. R. E. Freezer, one of subacute yellow atrophy of the liver following the taking of "Atophan" by Dr. G. W. Rake and one of congenital intracranial aneurysm with spontaneous subarachnoid hæmorrhage by Dr. Maurice Shaw. Dr. W. L. Watt has contributed Part I of a paper on leuchæmia.

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Certification.

IN recent years there has been a considerable extension of public welfare activity. In addition to the old time provident society movement and the various forms of personal insurance, workmen's compensation measures and national health insurance have engaged the attention of governments. Industrial hygiene is another means of improving the well-being of the masses. In order that these and similar undertakings may be conducted with economy and benefit to the community, it is essential that those responsible for the administration or management of the undertakings should obtain reliable information concerning the state of health of individuals concerned. Members of friendly societies are entitled to monetary benefits when incapacitated by accident or illness. The funds of the friendly societies have to be safeguarded against fraudulent or frivolous claims by requiring the medical officers in attendance on the members to sign certificates. Discipline at school would be impossible if children were allowed to absent themselves on the ground of an alleged illness unless the reality of the illness were vouched by the medical practitioners treating the children. The same may be said in connexion with large industrial firms. Claims made under the provisions of the several workmen's compensation acts have to be investigated before compensation is granted, for no insurance company could remain solvent if malingerers as well as those actually suffering some hurt were able to obtain money while absent from work. The promised measure of national insurance without medical benefit cannot be worked with success unless the strictest provisions are made to exclude claims based on untruthful statements. The obvious method of collecting information concerning the state of health and capacity for work of individuals in any community is to require medical practitioners to give certificates. The object for which the certificates are demanded, should never be forgotten. A medical practitioner signs certificates on the understanding that the information may contribute to the honest and impartial administration of funds and to the benefit of a small or large community. The General Medical Council many years ago called the attention of medical practitioners to the seriousness of what is termed loose certification. The following appears in the warning notice issued to the profession: "Any registered practitioner who shall be shown to have signed or given under his name and authority any such certificate, notification, report or document of a kindred character which is untrue, misleading or improper, whether relating to the several matters above specified or otherwise, is liable to have his name erased from the Medical Register." The fact that this warning has been issued and continues to be issued is evidence that loose certification is not an uncommon practice. At times untrue certificates are given in good faith. A patient tells a plausible tale and the doctor forgets when he certifies that the individual is incapacitated, that he has failed to verify the facts enumerated in the certificate. No certificate of injury or illness may be given unless there is objective evidence of the injury or illness. The facts set out in the certificate must be demonstrable and free from all traces of exaggeration. Moreover, it should be remembered that a medical practitioner's certificate is usually accepted without challenge and on this account the greatest care should be exercised in regard to the truth of each fact.

Large numbers of certificates will be required in connexion with the pending measure for national insurance. It is understood that the certificates required will take the form of a simple statement that the individual concerned is suffering from a named injury or illness and is unable to follow his occupation. The certifying medical practitioner may be asked to express the opinion whether the injury or illness will incapacitate the individual for a specified period of time. In view of the fact that this measure will concern practically the whole community of Australia, the Commission or other body responsible for the administration of the fund will adopt safeguards against claims by malingerers and others not entitled to the benefits. Should it transpire on inquiry that untrue, misleading or im-

proper certificates have been issued, it is certain that severe penalties will be exacted, to act as deterrents. The medical profession has been invited through its representative organizations, the Branches of the British Medical Association in Australia, to devise the methods for the issuing of the certificates by medical practitioners. It is probable that definite conclusions will be formed in the near future, so that the machinery for putting the scheme into force may be ready soon after the measure has become law. In these circumstances the attention of the profession is called to the warning notice of the General Medical Council and to the necessity for care in giving certificates. It is hoped that those who are lax in regard to these matters, will realize their responsibilities before the new enactment is passed and rigorous inquiries are instituted into the accuracy of the facts entered in the certificates. It would be disastrous if a few members of the medical profession brought contumely on the whole profession by their inability to distinguish between right and wrong.

Current Comment.

MIGRAINE, NARCOLEPSY AND EPILEPSY.

IN its correct application the word migraine denotes an attack occurring generally in two stages. The first or prodromal stage is characterized by some sensory disturbance. This usually takes the form of a disturbance of vision, such as the appearance of spectra or hemianopia. Tingling with numbness may be present and occasionally sensory aphasia may occur. The second stage is that of headache which as a rule is severe. It may be unilateral. Nausea and vomiting may or may not be a feature of the attack. Unless this conception of migraine is kept clearly in view, any discussion on the subject is bound to prove abortive. While the pathogenesis of migraine has not been definitely determined, it is held by many that the condition is of cortical origin. A good presentation of this view was made recently by C. P. Symonds in the opening paper of a discussion on migraine at the Royal Society of Medicine.[1] He said that knowledge of the mechanism of headaches was not so exact that it was possible to argue that increased intracranial pressure is the cause of migraine. In consequence it is in his opinion necessary to study the other phenomena and to determine whether it is possible to localize the seat of the disturbance in any part or any level of the brain or brain stem. The common vertical homonymous hemianopia may be due to a disturbance of function anywhere between the optic chiasma and the occipital cortex. The fact that hemianopia is frequently preceded by the perception of flashes of coloured light is in favour of a cortical situation. The attacks of disturbance of sensation on the right side with aphasia are suggestive of a postcentral cortical situation, but it is necessary, if this is so, to assume that there are two separate symmetrical and simultaneous areas of disturbance. It is conceivable that the transverse hemianopia may be due to symmetrical bilateral disturbance situated above or below the calcarine fissures. The occurrence of unilateral scotoma or monocular blindness is incompatible with the hypothesis of cortical localization. Symonds is very doubtful whether cases characterized by the occurrence of these symptoms can be included among those of true migraine. He concludes that the situation of the disturbance in migraine lies in the cerebral cortex, particularly in those parts in which vision and sensation are represented and that this disturbance is often bilaterally symmetrical. He finds it difficult to form any conclusion in regard to the nature of the disturbance, but is inclined to accept the view that it is the result of vascular spasm. This has been held by many other observers and the prevailing doctrine is that spasm results from over action of the cervical sympathetic. Howard Florey has recently carried out some work in which he found that no effect was produced in the cortical vessels of animals on stimulation of the cervical sympathetic trunk or of the vasoconstrictor centre in the medulla. Symonds points out that if Florey's findings are correct and that if vasoconstriction is the cause of migraine, it must result from a purely local disturbance of function of the vessel walls. Clinical experience goes to show that in many instances a disturbance of metabolism lies at the root of the matter and it is not improbable that the symptoms are the result of a chemical change acting on cortical or subcortical cells or on the cells of the sympathetic nervous system which are the seat of some hereditary or other predisposition.

The subject of epilepsy has been discussed in these columns on several occasions. Its resemblance to migraine is recognized. It is common to speak of "the epilepsies." Comparatively little progress has been made in regard to the discovery of the actual cause of epilepsy, but in the present state of knowledge it is reasonable to assume that certain chemical substances act as irritants to nerve cells and give rise to an excessive response when the cells are pathologically hyperirritable.

In last week's issue reports of two cases of idiopathic narcolepsy were published, one by Willis and the other by Bostock. Both these authors referred to an article published by Adie in the September, 1926, number of *Brain*. An abstract of this article will be found in THE MEDICAL JOURNAL OF AUSTRALIA of March 19, 1927. The clinical features of this condition have been discussed by both Willis and Bostock and need not be further considered in this place. Adie points out that to one unacquainted with the manifestations of true narcolepsy a descrip-

[1] *Proceedings of the Royal Society of Medicine*, May, 1927.

tion of symptoms by a patient or his friends would certainly suggest epilepsy. He distinguishes very rigidly between the two conditions, however, and states that they are not the same because in narcolepsy some of the attacks are reactive. He describes true narcolepsy as a functional disorder of the nervous system, probably an undue fatigueability of nerve cells in individuals with a peculiar kind of nervous activity that allows excessive responses to emotional stimuli and favours the spread of inhibitions. The affected nerve cells lie in the mesencephalon. In narcolepsy, as in migraine and epilepsy, the symptoms arise as a result of the stimulation of a certain set of nerve cells. It is necessary to postulate a vulnerability of the cell before the stimulus can produce its effect. The stimulus is in all probability a chemical one which acts either directly on the cell or through the intervention of the higher cerebral centres. While it is not suggested that migraine, epilepsy and narcolepsy are in any sense actually related to one another, it is not unlikely that they may resemble one another in that their production depends on the stimulation of certain nerve cells (cortical, subcortical or belonging to the mesencephalon) by chemical agents. Comparatively little research of a biochemical nature has been carried out in regard to the old riddle of epilepsy. It may be that the interest which has been awakened in narcolepsy, will stimulate investigators and that simultaneous research in the three diseases mentioned will bring forth results of definite value.

MENTAL STATES IN GYNÆCOLOGICAL PRACTICE.

In their papers published in this week's issue Evan Jones and Minogue and Constance D'Arcy have discussed questions which are of importance to practitioners of almost all branches of medicine. The close relationship between the mental state and the function of the organs of the body has long been recognized. Whether the average medical practitioner has paid sufficient attention to this relationship is another matter. Evan Jones and Minogue have discussed the influence of the conjugal state on insanity at the menopause. They have concluded that in many cases there is an antecedent history of neurotic symptoms and of various psychological stresses. D'Arcy has discussed disturbances of the menopause from the point of view of imbalance of the endocrine glands. Study of these two papers (and they are worthy of the most careful attention) will lead inevitably to consideration of the emotional life of woman.

The majority of emotional disturbances associated with symptoms referable to the organs of generation have a sexual basis. All medical practitioners have had experience of patients who complain of some menstrual irregularity or of a profuse leucorrhœal discharge or of vague pains and aches in the lower part of the abdomen or of the back, but whose pelvic organs are apparently normal or whose symptoms are out of all proportion to existing chronic inflammatory change. Patients of this type are as a rule reticent about the underlying cause and it is only by the most diplomatic and careful questioning that the medical attendant is able to discover what is really amiss. In the course of a lecture delivered before the Brooklyn Gynecological Society Donald Macomber referred to the manner in which "these symptoms are caused by the emotions which precede them."[1] He mentioned the James-Lange theory that certain emotions are felt because of changes produced in the organs and said that, although this might be so, it was a fact that emotional states are intimately bound up with "changes of a functional nature in various internal organs" and that these changes are produced through the sympathetic nervous system. The function of the organs is controlled by the sympathetic system and when some interference takes place with the proper inception or completion of function, pathological changes are produced. Thus a woman who practises *coitus interruptus*, interferes deliberately with an act which should be followed by deturgescence. When she has indulged in this habit for a considerable time, chronic congestion results. This congestion cannot be regarded as a functional change. An interference with function has resulted in a pathological change. It must also be remembered that the emotions alone may cause a suspension of function. For example, amenorrhœa may be caused by fear of pregnancy in a woman who has indulged in illicit sexual intercourse. Macomber refers to "another way in which emotions produce their effect upon the pelvic organs, namely through disturbance in the production of the various hormones." He holds that if for some reason which is not understood, an emotional state produces certain effects upon one of the internal secretions, it is apt to throw the balance of the others out of adjustment and produce symptoms. An example of this given by him is the fact that hot flushes in patients who have had their ovaries removed, are more frequent when they are worried or fatigued. Here, of course, function has already been disturbed and the effect of the emotion is to aggravate the imbalance. Macomber considers symptoms concerned with the emotions under three headings: those which indicate a disturbance of menstruation, those which have to do with the relationship between the sexes, and those which appear during the course of pregnancy. The experiments of Sherrington, Guthrie, Pike and Stewart tend to show that the emotions are not dependent on bodily change. Rather is it intended to draw attention to the necessity for the recognition of the part played by the emotions in the clinical picture presented by many patients. The abnormalities found on examination are seldom the only factors concerned in the patient's illness. Those who investigate the mental factors, will not only gain the mastery of an illness more quickly than those who do not do so, but they will be doing something towards staving off the subsequent development of the mental disorders of the climacteric about which Evan Jones, Minogue and D'Arcy have written.

[1] *American Journal of Obstetrics and Gynecology*, June, 1927.

Abstracts from Current Medical Literature.

PHYSIOLOGY.

Action of the Sympathetic on the Mammalian Heart.

THE heart is normally under the balanced control of its extrinsic nerves, preganglionic fibres of the parasympathetic stem, which enter *viâ* the vagus and end about the ganglia in the cardiac tissue, and post-ganglionic fibres of the sympathetic system which are widely distributed to the muscular and specialized tissues. The influence of the vagus upon the origin and propagation of the excitatory process has been studied in detail. Not so much has been done in relation to the sympathetic nerves and E. C. Andrus and L. E. Martin (*Journal of Experimental Medicine*, June, 1927) have attempted to examine certain phases of the action of the sympathetic. They find that when the action of the parasympathetic has been excluded by means of atropine, it is possible to demonstrate that the excitatory process in the heart is affected to a considerable degree by the control of the sympathetic nerves. Upon all phases of excitation and conduction in the mammalian heart with the exception of intraauricular conduction the action of the vagus and sympathetic are opposed. Here the vagus is without effect, unless the rate of transmission is abnormally slow. Stimulation of the sympathetic nerves on the other hand invariably causes a conspicuous rise in the transmission rate. The effects of the sympathetic and vagus nerves upon intraauricular transmission are in no sense synergistic. Under normal conditions there exists a delicate balance of such a nature that stimulation of one system involves inhibition of the other. It is, however, following paralysis of both sympathetic and parasympathetic nerves that the normal rhythm is maintained at a more or less constant rate.

Œstrin in the Placenta.

THE discovery that extracts capable of producing effects in animals which have had their ovaries removed, could be prepared from ovaries soon led to the extraction of other organs, notably the placenta with a view to ascertaining whether these also would yield extracts similarly active. It was not until quantitative methods of investigation were introduced that progress was made. It was soon found that extracts of the placenta contained an œstrus producing hormone apparently identical with that from the ovary. A. S. Parkes and C. W. Bellerby (*Journal of Physiology*, March, 1927) have called this hormone œstrin and have studied its distribution in the placenta and other reproductive tissues. They found that placental extracts have much the same order of activity as ovaries themselves; other products of conception and the uterine tissue contain very little. It is suggested that the presence of œstrin in the placenta is more easily explained by assuming that the placenta withdraws œstrin from the maternal circulation to protect the fœtus from its action, than that the placenta itself elaborates the hormone.

Influence of Coloured Light on the Sensitivity of the Eye.

IF different regions of the spectrum excite different retinal mechanisms, they should have comparatively little effect on each other. The degree to which one light interferes with another, may be considered as a measure of the extent to which they act on similar mechanisms. H. E. Roaf (*Journal of Physiology*, January, 1927) has measured the sensitivity of different parts of the retina by the threshold to coloured light. Exposure of one part of the retina to light has a general effect in decreasing the sensitivity of other parts; this is the effect on the dark-light adaptation of the eye. All regions of the spectrum have a similar effect on the adaptation of the eye, namely that they decrease the sensitivity to blue and violet most, green next and have very little effect on red. When, however, the two lights stimulate the same area of the retina, special differences are noted. Red light decreases the sensitivity to all regions of the spectrum. Green light decreases the sensitivity to green and blue, but has little effect on red. Blue light has most effect on the sensitivity to blue, less on that to green and least on that to red. A practical application of the results is that a blue screen is the best to protect the eyes from other lights, as when motoring.

Herpes Zoster and Antidromic Impulses.

A SERIES of researches by Lewis and his coworkers upon the responses of the skin to a variety of injuries has lead to the generalization that, whenever a lesion appears upon the skin and this lesion consists essentially of reddening followed by whealing or blistering, the corresponding reaction of the vessels is due to the local release of substances having histamine-like action. If this generalization is to hold good universally, it must include the phenomenon of *herpes zoster* which is well known to be associated with inflammatory lesions of the posterior root ganglion. Evidence accumulated to show that herpetic lesions may result from a variety of lesions of this ganglion or of the sensory nerve path upon which it stands; consequently T. Lewis and H. M. Marvin (*Journal of Physiology*, January, 1927) have reinvestigated the nature of antidromic nerve action and have looked for evidence that such action is due to the release of vasodilator substances in the skin. A twenty second faradic stimulation of the median nerve of cats from which the stellate ganglion of the same side had been removed three weeks previously, produced a flush in the foot pads that lasted for five to ten minutes. If immediately before stimulation the circulation of the limb is brought to a standstill and is so maintained for a period of time equivalent to that previously determined for the subsidence of the flush and if the circulation is now restored to the limb, the pads all flush intensely. The flush displayed by these pads subsides very gradually; its duration from the release of the circulation is equal to its duration, measured from the end of stimulation, when the circulation is undisturbed. That is to say, the vasodilatation produced antidromically is prolonged by a period of circulatory arrest. This can be interpreted to mean only that the flush is due to vasodilator substances released in the skin, that these substances are held in place during circulatory arrest and are subsequently removed in the ordinary manner when the circulation is restored. They conclude that antidromic vasodilatation is due to the conveyance of impulses along the sensory nerves, not to the vessels, but to the tissues of the skin and that these impulses release histamine-like substances in the skin; these substances then act upon the minute vessels and produce vasodilatation in the territory of release. *Herpes zoster* is due to a similar release, produced by irritation of the sensory nerve tract.

Experimental Obstructive Jaundice.

THE unusual conception of the processes involved in the development of jaundice following occlusion of the biliary ducts ascribes to the liver a very active part in adding bilirubin to the blood. The work of Mann and his collaborators tends to minimize the importance of the liver as the site of bilirubin formation for the rate of bilirubin formation is not altered by removal of the liver. An intravenous injection of hæmolysed blood greatly accelerates the rate of bilirubin formation, but the removal of the liver had no immediate effect on this process. J. L. Bollman, C. Sheard and F. C. Mann (*American Journal of Physiology*, April, 1927) have studied the rise in bilirubin content of the blood following extirpation of the gall bladder and ligation of the bile duct. In these circumstances there is an immediate rise in the bilirubin content of the blood which may be detected within five minutes of the ligation. A manometer was attached to the bile duct and it was found that the maximum pressure reached was 270 to 300 millimetres. No increase in bile pigment in the blood was found until just before this pressure was reached. As soon as the pressure in the biliary ducts has risen to 250 to 300 millimetres of water, the hepatic cells become impervious to bilirubin, so that bile pigment is neither excreted into the bile capillaries, nor is it absorbed from the blood by the hepatic cell. If the obstruction is in the common bile duct and the gall bladder has not been removed, the pressure in the ducts is not raised until the concentrating

activity of the gall bladder is overcome and this usually occurs in forty-eight to fifty-six hours if the gall bladder is not diseased. If submaximal pressure is maintained in the common bile duct, bile continues to be excreted, but there is retention of bile pigment which produces hyperbilirubinæmia.

Blood Calcium in Experimental Jaundice.

W. C. BUCHBINDER AND R. KERN (*American Journal of Physiology*, April, 1927) have studied the changes in the calcium content of the blood in jaundice. They find that in puppies, subjected to common duct ligation, there occurred a progressive decrease in blood serum calcium, reaching approximately half the normal value. The animals increased in weight, but their growth and weight remained below normal, as was evidenced by the greatly increased growth following the reestablishment of bile flow to the intestine. Decrease of the serum calcium content was not associated with increased irritability of the neuro-muscular apparatus. In three cases of human jaundice there was also found low calcium serum values which approached the normal with decrease of the jaundice.

BIOLOGICAL CHEMISTRY.

Basal Metabolism.

F. A. PICKWORTH (*Proceedings of the Royal Society, London*, March, 1927) has measured the human basal metabolism by estimation of respiratory exchange from analyses of the air of a chamber of about 10,000 litres in which the subject can sit, lie or sleep without disturbance for a period of two hours. This new method was devised to make possible accurate determinations of the basal metabolism of patients in mental hospitals in whom changes in the endocrine organs as well as in the central and sympathetic nervous systems have been shown to occur. It was evident that the use of the bag and spirometer, involving mouth and nose pieces or a mask, would introduce disturbing factors of fear, anxiety and excitement which should be eliminated. The chamber consisted of a room lined with thick lead and soldered so as to make the walls completely airtight. The roof was of glass. An electric fan moved the air and warming or cooling was effected by water in copper pipes. The walls were pleasantly decorated and the complete chamber was a good substitute for a light, airy, cheerful bedroom. Various indicators to record changes in temperature in the chamber, leakage, change in pressure in the chamber and altered humidity were adjusted about the chamber. The analyses were made on an enlarged Haldane apparatus which allowed the analysis of a sample of one hundred cubic centimetres. In an experiment the subject took no meat on the previous day. After a light supper at 8 p.m. the fasting patient next morning at 8 a.m. entered the chamber and sat in a chair or lay down for thirty minutes after which the door was closed. The fan was switched on and the first sample taken after at least five minutes. In two hours the second sample was taken. The basal metabolism is calculated from the production of carbon dioxide. The authors assume that their procedure of dieting the patient leads to a standard respiratory quotient of 0·86. The author finds that he obtains figures for basal metabolism which are much lower than those given by the use of a bag. He considers that the different transformations of energy can be grouped into those due to muscular movements either voluntary or semi-conscious, those caused by muscular tonus either postural or induced by attention, those accompanying involuntary muscular motions as of the heart and peristalsis and those concerned in the production of internal and external secretions and of nervous activity. He measured the diminution of metabolism due to relaxation of body and of mind, that due to reading an easy book, that produced by partial attention to the surroundings, that following a feeling of irritation. The effect of sleep was studied under various conditions. The author points out how estimations of basal metabolism by the bag method involve certain of these preventible factors which may obscure the results. His figures show that by reducing the magnitude of these conditions there is a fall of 20% in the magnitude of the basal metabolism. Such figures in his opinion approach more nearly to the true basal metabolic rate.

Measurement of Hæmolysis.

E. PONDER (*Proceedings of the Royal Society, London*, March, 1927) has made further studies of the measurement of hæmolysis. He has already shown the character of the laking of blood corpuscles by saponins, bile salts and soaps and has given reasons for the belief that the blood corpuscles are not identical, but form a population of cells each member of which possesses a different resistance to the lysin, the resistances being distributed according to a frequency curve. He now records the details of two methods for measuring the degree of hæmolysis. In the first method a radiometer is used. The rays from a suitable lamp traverse a cell containing the corpuscular mixture and fall on the vanes of a radiometer suitably protected by a jacket. The degree of lysis can be obtained from the rate of revolution of the vanes. In the second method the change in conductivity of selenium when exposed to light is used to estimate the amount of light passing through the suspension and thus the percentage hæmolysis. The author points out that the two methods are much alike in utility, but the curves of calibration vary in shape in such a way that the radiometer shows more sensitiveness in the region of 0% to 50% lysis and the selenium cell in the region of more complete lysis. With the aid of these methods the author studied the effects of an accelerator and of an inhibitor on a lysis system and found that his results confirm his original hypothesis of the variable resistance of corpuscles to lysis.

Acclimitization.

J. ARGYLL CAMPBELL (*Journal of Physiology*, January, 1927) has made an investigation of the effect of prolonged alterations of oxygen pressure in the inspired air upon the tensions of oxygen and of carbon dioxide in the tissues and on the amount of hæmoglobin. His experiments have been carried out on rabbits placed in a closed chamber. From these experiments it appears that rabbits exposed for periods of six weeks to either lowered oxygen pressure in the air, as low as 60% below normal or to raised oxygen pressure as much as twice normal, consume the same amounts of oxygen as under usual conditions. Prolonged exposure to lowered oxygen pressure diminishes greatly the tensions of carbon dioxide and of oxygen in the tissues and leads to increased hæmoglobin in the blood. Prolonged exposure to increased oxygen pressure leads to increased tension of oxygen in the tissues, but to little increased tension of carbon dioxide. The amount of hæmoglobin in the blood is lessened. The author regards the changes in the amount of hæmoglobin as playing an important part in acclimatization. The author has been unable to observe any signs whatever of a tendency to establish slowly an oxygen tension similar to that observed in tissues of animals living under usual conditions near sea level.

Sampling Alveolar Air.

YANDELL HENDERSON (*Journal of Physiology*, January, 1927) has made some experiments with the automatic sampler of expired air by which he obtains samples of alveolar air. He advances theoretical arguments to show that this sampling may be expected to afford very nearly average alveolar air. Alveolar air varies in respect to tension of carbon dioxide during quiet breathing at rest from thirty-eight millimetres of mercury to forty millimetres of mercury, a variation of about 5%. As ethyl iodide has a coefficient of distribution only a little less than that of carbon dioxide, its fluctuations in alveolar air should be similar to those of carbon dioxide. Some experiments have been made by the author in which the amount of ethyl iodide in the samples taken by the automatic sampling device have been compared with the average figure in samples taken in the usual way at the end of inspiration and at the end of expiration. They show a close agreement. The author contends that automatic sampling of alveolar air for carbon dioxide has many advantages over the classic method of voluntary deep expiration.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION combined with meetings of the Section of Neurology and Psychiatry and of the Section of Obstetrics and Gynæcology was held at the B.M.A. Building, 30 to 34, Elizabeth Street, Sydney, on July 28, 1927, Dr. T. W. Lipscomb, in the absence of the acting President, in the chair.

Mental Conditions of Women after Oophorectomy and After the Menopause.

DR. S. EVAN JONES and DR. S. J. MINOGUE read a paper entitled: "Gynæcological Factors in Mental Disorder" (see page 282).

DR. CONSTANCE D'ARCY read a paper entitled: "Disturbances of the Nervous System in the Natural and Artificial Menopause" (see page 291).

DR. CHISHOLM ROSS paid a tribute to the readers of both papers. In regard to Dr. D'Arcy's contentions concerning the influence exercised over the bodily condition at the menopause by the endocrine secretions, he agreed in general terms. He wished to know, however, whether there was any *post mortem* evidence of degenerative or other changes in the endocrine organs in women who had died while suffering from menopausal symptoms. He expressed surprise at the relatively good prognosis that Dr. Jones had found in alcoholic psychosis and in the delusional states. They all knew that paranoia was a hopeless malady. But it was usually assumed that the prospects in alcoholic insanity were not favourable. He did not agree fully with Dr. D'Arcy in regard to the sexual appetite after the removal of the ovaries. He had noted that if women had had long previous sexual relations before the removal, the desire was much increased after operation. It was interesting to learn that in Dr. Jones's series the epileptic element was not very prominent. He was not a believer in the efficacy of all sorts of glandular preparations. He asked Dr. Jones to tell him what specific and general treatment had been employed in the patients in the series. He regarded both papers as most illuminating.

DR. A. J. GIBSON said that he was surprised to learn how frequent mental disturbances were at the period of menopause. In gynæcological practice they did not often encounter these changes. He had recently seen two patients in whom he anticipated that insanity would develope in the future. They had a bad hereditary taint and had undergone a great deal of stress during their younger life. One of the patients had had Cæsarean section performed when she was forty-two years of age. She had been in labour for fifty-two hours and the *os uteri* was dilated to the size of a two shilling piece. Dr. Gibson had determined to perform Cæsarean section in order to obtain a living child. There had been some infection of the wound, but this healed after a time and the patient made a satisfactory recovery. The child was living and well. The patient had become nervous and had terrible thoughts. She wept a great deal. She had the constant idea of killing her baby. Dr. Gibson had discussed her condition with the patient with the idea of discovering its origin. He had learned that she was the third daughter of her mother. At the time of her birth her mother had had symptoms of mental disturbance. She had hated her because she was a girl. Later she had had a hard life as a domestic servant and had had a nervous breakdown. She had been happily married. The long labour and her dislike of boys appeared to have precipitated the mental symptoms. She was actually fond of her baby. Dr. Gibson thought that there was always some great mental stress extending over a long period before the disturbance manifested itself. Additional factors might be a difficult labour or some toxæmia. In conclusion he asked Dr. Jones to suggest the best form of treatment for conditions of the kind he had related. What was the prognosis? He had not had good results from endocrine preparations. He asked Dr. D'Arcy which preparations she used.

DR. C. A. HOGG thought that thirty years previously it had been more common to perform double ovariotomy, for ovarian troubles, malignant cysts and tumours excepted. In those days they had seen very little baneful effect on the mind as a result of the operation. He doubted whether there was frequent connnexion between nervous instability and the removal of the ovaries. Moreover many women went through the menopause without manifesting any definite disturbance of the mind. In referring to treatment with glandular extracts Dr. Hogg thought that these preparations in a few cases had a definite effect on the mental condition connected with the menopause, but generally speaking their results had been disappointing.

PROFESSOR W. S. DAWSON congratulated the speakers on their contributions. Dr. Jones was at the threshold of further important work and had given them evidence of some thorough and careful investigations. The facts that he had laid before the meeting pointed to the disappointing conclusion that there were so many factors involved in the production of the mental disturbances affecting women between the ages of forty and sixty that they could not pick out one as the chief cause of the mental disorder. In regard to the ductless glands it appeared that they could not incriminate the ovaries alone. The glandular defect was more general and affected the whole organism. It was significant that the menses might cease and pregnancy occur. Again the menopause might take place and the woman might retain both physical and mental youthful qualities. It was a distressing conclusion that they had a host of ætiological factors to deal with, the analysis of which was most difficult. He had looked through the reports at the Royal Prince Alfred Hospital and had found that among two hundred women subjected to hysterectomy and oophorectomy only three had shown any signs of mental disorder before their discharge from the hospital. In two of these patients there had been signs of mental instability for twenty years or more. He held that mental stress had played an important part in the third patient.

DR. R. J. MILLARD, C.M.G., C.B.E., suggested that the object of the joint meeting was to discuss whether the risk of mental disorder as a result of oophorectomy was sufficient to render it advisable for surgeons to refrain from performing this operation. The opinions expressed had left them with a reasonable amount of doubt. There appeared to be little definite evidence that oophorectomy produced a harmful effect on the mind. As an onlooker he was horrified or perhaps he should say that he was impressed at the frequency with which the ovaries were removed. No doubt these operations were correct from a surgical point of view. He raised the question as to which was the greater of the two evils. The figures presented by Dr. Jones did not reveal that the operation was likely to induce mental disturbance. It was probable that the patients who became deranged had suffered from mental instability before. He thought that the surgeon should investigate the patient's mental and nervous history with care before determining to remove the ovaries. It might be better to leave ovaries with cysts in the patient's body than to risk such a disaster as the occurrence of insanity.

DR. T. W. LIPSCOMB in closing the discussion thanked both speakers for their most instructive papers. The amount of work that Dr. Evan Jones and Dr. Minogue had expended in their investigations was enormous. He ventured to differ from Dr. Hogg in regard to the frequency of double oophorectomy thirty years previously. He had been in practice for close on thirty years and had not experienced this frequency. He had noticed that climacteric symptoms were much less evident in working class women than in those who had time and leisure to think about their real and imaginary ills. He, like some other speakers, had been very disappointed at the results of glandular therapy in the treatment of climacteric nervous symptoms.

In his reply Dr. S. Evan Jones admitted that the investigation had involved very hard work. He held that

suggestion played an important part in the production of many of these mental symptoms. To Dr. Ross he said that he had no idea what treatment had been carried in a large number of the patients in the series. There was no information in the notes. At Broughton Hall they had employed symptomatic treatment and at times had given glandular extracts. The most useful combination was ovarian extract with thyreoid extract. Dr. Gibson's analysis and suggestion seemed to him to be a reasonable and admirable procedure. In this way the patient had obtained an insight into the real nature of her condition. Dr. Millard had put the matter into a nutshell. He was satisfied that the operation in itself was not an ætiological factor of the mental disturbances. At first they had thought that it was so, but their investigations had proved to them that their surmise was wrong. He again referred to the length of time that elapsed between the operation and the onset of mental symptoms. On the other hand he was emphatically of opinion that the operation should not be undertaken for the relief of nervous or mental disease. The indications should be surgical. He related the case of a girl of eighteen years who suffered from dysmenorrhœa. A surgeon had performed oophorectomy for the relief of the pain, but no relief had followed. The abdomen had been opened a second time on account of adhesions and these had been treated. Still the pain persisted. The wound had refused to heal. When he had seen her she had a sluggish looking wound about 3·75 centimetres (one and a half inches) in length. Treatment by suggestion was applied and the wound healed without further difficulty. The pains also disappeared. It appeared that the patient had suffered from somnambulism and other hysterical symptoms.

Dr. Constance D'Arcy referred to the American teaching that a hormone from the endometrial glands excited and stimulated the ovarian secretion. In view of this hypothesis it was suggested that if the ovaries were removed it was essential to leave some endometrium. In reply to Dr. Hogg she pointed out that the patients seen by him were suffering from severe mental disturbances. Those she had to handle were affected with much milder forms of disorder. She had found many glandular preparations of considerable value. She objected to mixed gland extracts, as it was working in the dark to use them. The thyreoid extract was the most beneficial and active. Extra systoles often disappeared under the influence of thyreoid medication and patients with low blood pressure were greatly improved when treated with adrenal preparations. In regard to Dr. Dawson's conclusions, she maintained that it was rare for the mental symptoms to appear soon after hysterectomy. She referred to a patient who had been kept in hospital for a considerable time after a Wertheim operation had been performed. The patient had suffered a burn which healed slowly. Mental and nervous symptoms appeared; they were treated successfully with glandular extract. She presumed that the hormones in the patient's body helped her to carry on for a time. After these hormones had been exhausted the symptoms appeared. She emphasized the fact that double oophorectomy was usually performed for gonorrhœal infections. It was possible that the infection had some ætiological effect. She was not prepared to accept Dr. Millard's advice to leave ovarian cysts alone. It was not possible to determine from general signs and symptoms whether the cysts were malignant or whether they would become malignant. She spoke of the dread of oophorectomy in some women until the truth was explained to them.

A MEETING OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Women's Hospital, Melbourne, on July 20, 1927. The meeting took the form of a series of clinical demonstrations by members of the Honorary Staff.

Hydatidiform Mole.

DR. W. D. SALTAU showed a female patient, aged thirty-nine years, a *multipara*, who had been admitted to hospital on July 11, 1927. She had had a child four years and a miscarriage two years previously. She had had a normal menstrual period ending on February 10, 1927, and then amenorrhœa until the end of March, when she had commenced to lose some blood *per vaginam*, and this slight loss had persisted almost daily. On April 12 she had had a profuse flooding which had soon ceased. Slight loss of blood had continued with one or two floodings until the morning of July 12, when after severe pains in the lower part of the abdomen, she had expelled a large hydatidiform mole. On admission the uterus had corresponded to the size of a five month's pregnancy. Vaginal examination had shown that the *os uteri* was well dilated and there was some bleeding. On the day after admission the uterus had been explored and a few vesicles had been found to be still adherent to the uterine wall. These had been evacuated with the finger and the uterus lightly curetted. The hæmorrhage had ceased and apart from a slight sapræmia, convalescene had as yet been uneventful.

Dr. Saltau pointed out that if any further hæmorrhage occurred the uterus would be again explored and the uterine scrapings examined microscopically for any evidence of chorion epithelioma, which if found would be followed by radical treatment. In view of the patient's age and the length of the history he thought that a very guarded prognosis should be given.

Preeclampsia with Revealed and Concealed Accidental Hæmorrhage.

Dr. Saltau's second patient was a *primipara*, aged twenty years, who had been admitted to hospital in labour on June 6, 1927. Labour pains had commenced two or three hours previously and on the way to the hospital she had commenced to lose blood *per vaginam*. She had last attended the antenatal department about one month previously, when her urine had not contained any albumin. She had had some œdema of the legs for a week before admission and her face had been somewhat pale and puffy. On examination the cervix had been found to be about a quarter dilated, the membranes intact and the child lying in the right occipito-posterior position. The placenta could not be felt. Some tenderness of the abdomen had been present over the lower portion of the uterus which was moderately tense. The urine on heating had become "solid" with albumin. The systolic blood pressure had been 140 millimetres of mercury and the pulse rate 104 in the minute. Labour pains had appeared to be infrequent and the uterus had not become relaxed completely between them. She had been given sixteen milligrammes (one-quarter of a grain) of morphine as well as *mistura sennæ composita* ninety cubic centimetres (three ounces). Colonic lavage had also been carried out. A tight binder had been applied to the abdomen and "Plastine" to the loins. Catheterization had yielded only fifteen cubic centimetres (half an ounce) of urine. The hæmorrhage had continued and the pulse rate had risen to 130 in the minute. The œdema of the face had increased rapidly and signs of mental irritation had appeared. Packing of the vagina had been contemplated, but vaginal examination had shown that the *cervix uteri* had dilated to more than three-quarters and it was then decided to rupture the membranes. About an hour and a half later the patient had delivered herself of a still-born male child weighing four kilograms (eight and a half pounds). The third stage had been normal and examination of the placenta had shown blood clot adherent to about half its area. The uterus had contained a large amount of old blood clot. The still-birth had at the time been attributed to the extensive premature separation of the placenta, but in view of the fact that there had been no operative interference it had been extremely interesting to find on *post mortem* examination of the baby that the tentorium was torn on one side with fairly extensive cerebral hæmorrhage. The urine had remained solid on boiling for about twenty-four hours and had then rapidly cleared, no albumin being detected six weeks later.

Dr. Saltau pointed out that the interesting features were the undoubted preeclamptic toxæmia, as manifested by the large amount of albumin in the urine, the diminution in the amount of the urine, the rapidly increasing œdema

and the profound mental irritation and the toxæmic accidental hæmorrhage.

Indications for the Induction of Premature Labour.

DR. A. M. WILSON, before showing his patients, made a few remarks on the induction of premature labour. He pointed out that the following factors were concerned in the mechanism of birth:

1. The proportionate size between the fœtal skull and the maternal pelvis.
2. The position of the fœtus.
3. The presentation of the fœtus.
4. The formation of an efficient hydrostatic dilator.
5. The dilatability of the maternal soft parts.
6. The mouldability of the fœtal skull.
7. The strength of the forces of labour.

The indications for the induction of premature labour could be clinically divided into two groups:

1. The pelvic or disproportionate causes.
2. The extra-pelvic causes, including toxæmias, constitutional causes and *ante partum* hæmorrhage.

In the first group of cases induction was practised primarily for the sake of the child and in the second group primarily for the sake of the mother. In the first group as the induction was done for the sake of the child it was necessary to get a good result, namely a living healthy child. All statistics of inductions done for disproportion were unsatisfactory and in most cases yielded an immediate fœtal mortality up to 15% and a large neonatal mortality. Unfortunately in these statistics the *primigravidæ* were not separated from the *multigravidæ*. Most authorities were agreed that induction before the thirty-sixth week was so dangerous to the child that it should not be considered. From the thirty-sixth week onward there was but little alteration in the size of the fœtal head and the great advantage gained by the induction was in the mouldability of the fœtal head. This, whilst being an advantage, was also a disadvantage in that the softer more compressible head was driven through the pelvis and against the resistance of the maternal soft parts. This resistance was very great in a *primigravida* and if the statistical survey separated the *primigravidæ* from the *multigravidæ* it would be found that the fœtal death rate was very much higher in the former than the latter. Dr. Wilson stated that he agreed with Whitridge Williams that induction should not be done on *primigravidæ* for disproportion, but that they should be allowed to go on to full term and be given a "trial labour." Dr. Wilson, however, strongly believed in the induction of labour for minor degrees of pelvic contraction in *multigravidæ* and had induced labour eight times in 1927 without any immediate or neonatal fœtal mortality. With regard to the extrapelvic indication for induction by far the commonest were the toxæmias of pregnancy which did not respond to treatment and the constitutional diseases, especially chronic nephritis. In these cases, however, owing to the malnutrition of the fœtus the fœtal mortality was high. He had induced labour six times in 1927 in cases of this group without any maternal mortality, but three fœtuses had had been still-born.

With regard to the technique of induction, a rectal tube (sometimes two) was inserted into the uterus. Dilators were very rarely necessary after the thirty-sixth week. If the *cervix uteri* was not open it could in practically every case be easily opened by the examining fingers. The membranes were separated around the internal *os* as high up as possible and the anterior lip of the cervix was seized with a sponge holding forceps and the tube guided into the uterus. The whole tube was pushed into the uterus and no vaginal packing was needed. In the large majority of cases pains commenced within twenty-four hours, especially in the *multigravidæ*.

Dr. Wilson's first patient had had two children. She was thirty-seven weeks pregnant and had for the previous month been complaining of severe pain over the gall bladder region. The pain had been so severe and constant that she could not sleep. She had also had frequent attacks of vomiting. Owing to the severity of her constitutional symptoms it had been decided to induce labour. A rectal tube had been inserted, pains commenced thirty-six hours later and a still-born fœtus weighing three and a half kilograms (seven and three-quarter pounds) had been delivered eleven hours later. *Post mortem* examination of the fœtus had revealed a deeply torn *tentorium cerebelli* and a very extensive cerebral hæmorrhage. Dr. Wilson pointed out that this unfortunate case illustrated the risks of induction and also the extensive cranial injuries that could occur even in a spontaneous delivery.

Dr. Wilson's second patient was a woman who had had five children. She was thirty-eight weeks pregnant and had been admitted one week previously. There was a history of two previous still-born children, probably due to a toxæmia in the mother. The systolic blood pressure had been 160 millimetres of mercury. The urine had contained a large amount of albumin. Under treatment the blood pressure had fallen to 130 millimetres of mercury, but the albumin in the urine had remained about the same. There had been no albuminuric retinitis. There had been forty-seven milligrammes of urea per one hundred cubic centimetres of blood. The urea concentration test had given a poor result. The Van den Bergh test had yielded no reaction but a positive result to the Fouchet test had been obtained. The diastase index in the urine had been 6·6. In view of the previous history induction of labour had been advised and would be performed on the following day.

Duct Carcinoma of the Breast.

DR. P. G. BRETT showed a woman who had had two children. She was fifty-one years of age and had last menstruated two years previously. Eighteen months previously she had noticed a yellowish odourless discharge from the right nipple and this discharge had recurred about every seven days. Latterly the discharge had become bloodstained and she had noticed a painless lump just below the nipple. Occasionally the lump had become red and she had then noticed some pain in the right axilla. On examination there had been beneath the right nipple a hard swelling about four centimetres (one and a half inches) in diameter, freely moveable over the ribs, but slightly adherent to the overlying skin which had not been freely moveable over it. In the right axilla two small glands, not tender but moderately hard, had been felt. A radical removal of the breast had been done and microscopical examination of the tumour had shown it to be a duct carcinoma containing a small abscess. Dr. Brett pointed out that duct carcinomata of the breast were usually flat, soft and of slow growth. Secondary deposits were rare and there was no retraction of the nipple from which there was usually a bloodstained discharge. Duct papillomata, although they could occur at any age, were rare after fifty and were not accompanied by retraction of the nipple, dimpling of the skin or enlargement of the neighbouring lymphatic glands. There was usually a sero-sanguineous discharge from the nipple.

Tumour of the Breast.

Dr. Brett also showed a woman, aged thirty-nine years, who had had four children. Her last child had been breast fed for only three months and during the puerperium there had been some pain and swelling in the right axilla. Since then she had had some aching in both breasts, especially during the menstrual periods. Six months previously a lump, about as bigh as a pea, had appeared in the lower half of the left breast and had rapidly increased in size, until at the time of presentation it was about as big as an almond. The swelling was firm, freely moveable over the underlying tissues, but slightly adherent to the skin in which there was no puckering. In the right axilla two very small glands could be felt along the axillary vein.

Diabetes Insipidus.

Dr. Brett's last patient was a female, aged thirty-two years, who, as long as she could remember, had been very thirsty and had drunk large quantities of fluid. She had passed in one twenty-four hour period 14·2 litres (499

ounces) of urine with a specific gravity of 1,000 and containing no albumin or sugar. She had been given 0·5 cubic centimetre of pituitrin at 11 a.m. and at 7 p.m. and during the corresponding twenty-four hour period she had passed only 4·4 litres (154 ounces) of urine. Dr. Brett briefly discussed the ætiology of *diabetes insipidus* and stated that in the patient presented no cause had as yet been found.

Pyelitis of Pregnancy.

DR. J. S. GREEN showed a woman who had had six children and who had been admitted to hospital when four and a half months pregnant, suffering from pyelitis. She had had shivers and sweats and the temperature had been 38·9° C. (102° F.). The urine had contained pus and colon bacilli. There had been definite tenderness over the right kidney. Potassium citrate four grammes (sixty grains) had been given every two hours for twenty-four hours and then "Hexsotate" three times a day. Fluids had been given freely by the mouth and the bladder had been washed out twice a day. The symptoms and signs had rapidly subsided.

Albuminuria of Pregnancy.

Dr. Green's second patient was a *primipara* who had been admitted to hospital with œdema which had been present for the previous month. The urine had contained 0·5% albumin. The onset of labour had been hastened by the administration of quinine and castor oil by the mouth and by injections of "Pituitrin." Four days after labour the urine had contained no albumin and the tests for renal function had been satisfactory.

Vomiting of Pregnancy.

Dr. Green's last patient was a woman who had had two children and in whom severe vomiting of pregnancy had been successfully treated by absolute limitation of all food and fluids by the mouth and by the administration of glucose and saline solution *per rectum*. One week after admission she had been able to take a full diet without vomiting.

The Surgical Treatment of Pelvic Inflammation.

DR. A. SHERWIN showed a series of patients illustrating the surgical technique employed in dealing with pelvic inflammation.

His first patient was a female, aged thirty six years. This patient after first undergoing conservative treatment, namely hot douching, applications of heat to the lower part of the abdomen and rest for some weeks till the acute symptoms had subsided, had undergone the conservative operation consisting of removal of both tubes, one ovary and the appendix; the uterus had been retained. By pursuing this waiting policy the size of the inflammatory mass had been reduced and the infectivity of the organism diminished. The points to be emphasized in the removal of pus tubes were as follows. The surgeon should commence by removing a wedge of the uterine cornu, he should cut through the mesosalpinx and raise the tube to the perpendicular. It could then be shelled out with little if any escape of pus, the pelvic cavity having previously been protected by packs and the tube itself surrounded by gauze. If pus escaped a vaginal drain should be used. The operation should be completed by removal of the appendix.

In the second series applicable to the more extensive inflammatory lesions or to women of maturer years, the operation of hystero-salpingo-oophorectomy had been performed with the object of demonstrating that the more radical the operation, the greater the relief obtained.

A patient, aged seventeen years, had undergone a plastic operation for bicornuate uterus some time previously. Subsequently she had acquired a double salpingitis with definite metrorrhagia which had failed to respond to treatment including radium therapy. Complete excision of a left tubo-ovarian abscess and a pathological right tube, uterus and appendix had been followed by rapid improvement in general health.

Another woman, aged twenty-six years, a *multipara*, had been greatly relieved by radical removal of uterus, both tubes, one infected ovary and appendix.

The third series comprised patients with puerperal infections and with abscesses in the broad ligament which had been drained extraperitoneally.

A woman, aged twenty-six years, had been admitted on the sixth day of the puerperium with a history of forceps delivery and manual removal of a retained placenta. She had been treated as though suffering from puerperal septicæmia and ten days after admission a mass had formed in the right iliac fossa. As this had been too high up to be reached by a posterior colpotomy an incision had been made parallel to Poupart's ligament, the muscles had been incised, the peritoneum had been stripped towards the mid-line and the abscess cavity had been drained with rubber drainage tubes. Though gaining some relief from this, she had passed through a severe attack of septicæmia for eight weeks, the temperature reaching as high as 41·7° C. (107° F.) on one occasion and the pulse ranging from 120 to 140 in the minute. She had been finally discharged cured at the end of the tenth week. Though four blood cultures from this patient during the first fortnight had yielded no growth she had been treated with mercurochrome injections. Twenty cubic centimetres of a 1% solution had been followed by the intravenous injection of five hundred cubic centimetres of normal saline solution on four occasions. A culture of the pus evacuated from the broad ligament abscess had yielded streptococci.

Puerperal Sepsis.

DR. EDWARD WHITE showed patients illustrating several varieties of puerperal sepsis. His first patient was a young woman with pelvic cellulitis. She had had her second normal confinement outside hospital, three days before admission. There had been a rigor on the second day and an intrauterine douche had been given on two occasions. On admission she looked very ill, the uterus had been large and subinvoluted and the lochia dark and profuse. Her condition had been regarded at first as septicæmic or as sapræmic. Whilst a blood culture was being taken, which later grew no organisms, twenty-six cubic centimetres of a 1% solution of mercurochrome soluble 220 had been injected intravenously. Since admission, the patient had steadily improved, mainly from good nursing. As no organisms were grown on blood culture, no further mercurochrome had been injected. A small thickening due to pelvic cellulitis had later on been palpable *per vaginam*. This patient was being treated along conservative lines with no intrauterine douches and after ten days was rapidly improving.

The second patient had septic uterine thrombosis. Her first confinement had taken place outside hospital six days before admission. The onset of fever had occurred four days after child-birth. She had been very ill on admission. Blood cultures made on two occasions had not yielded organisms. Twenty cubic centimetres of mercurochrome had been injected intravenously. Two weeks after admission she was beginning rapidly to convalesce, mainly from nursing and conservative treatment.

Dr. White here showed the temperature chart of a patient recently admitted with a definite pyrexia. She had been confined outside hospital six days before admission. Her condition was due to pyelitis with frequent and painful micturition which was being rapidly cleared up by the oral administration of large doses of potassium citrate. This chart was shown to demonstrate the fact that sometimes pyelitis and not sepsis could cause high fever during the puerperium.

The third case was one of pelvic peritonitis and cellulitis following abortion. The patient had been three months pregnant and had been admitted on account of incomplete abortion with pyrexia. On account of severe hæmorrhage it had been necessary to empty the uterus by gentle curettage. She had then rapidly become acutely ill and developed a large, tender, fluctuant mass in the pelvis which was evacuated by posterior colpotomy with a satisfactory result.

A fourth patient had septic uterine thrombosis following an abortion. Two weeks after admission, she had com-

plained of acute pain in the left side of the chest and had had signs suggestive of pulmonary infarct. Sixty cubic centimetres (two ounces) of fluid had been aspirated from the pleural cavity and the fluid had contained hæmolytic streptococci. As the temperature chart showed, this patient had been very ill for weeks. On three occasions the blood culture had grown no organisms and mercurochrome had therefore not been injected. Later an autogenous immunotransfusion had been given with definite improvement.

A fifth patient, convalescent from puerperal septicæmia, was shown. She had been confined outside hospital; there was a history of preceding albuminuria and she had been admitted on the sixth day, acutely ill with a general and an extensive local infection and a complete tear into the rectum. She had developed empyema and this had been drained. Later there had appeared erysipelas of the face, a grave portent. Mercurochrome had been injected twice and on three occasions an immunotransfusion had been performed. After six weeks of acute illness with high temperature this patient had recovered and was a living example of treatment by mercurochrome injection on admission, followed by repeated immunotransfusions.

The temperature chart of another case of abortion septicæmia in a patient, too ill to be shown, was displayed. Hæmolytic streptococci had been grown on blood culture, but two blood cultures made later on had yielded no organisms. After several weeks of severe illness and in spite of every treatment this patient was getting worse and illustrated the difficulties and disappointments in treating septicæmia.

Carcinoma of the Cervix.

Dr. White then showed two specimens recently obtained by Wertheim's operation of panhysterectomy for *carcinoma cervici*. The first was from a woman, aged twenty-eight, whose one child had been born seven years previously. There had been bleeding after coitus for four years and an offensive discharge for five months. She had been cachectic. The specimen contained a large fungating epithelioma of the cervix 7·5 centimetres (three inches) in diameter, which had been removed with a healthy collar of vagina varying from 2·5 centimetres (an inch) to 3·75 centimetres (an inch and a half) in width.

The second specimen was from a nulliparous, well nourished woman, aged forty-eight. She had had a profuse brown discharge for one year and severe bleeding one week before admission. Three weeks from operation, after radium was applied to the vaginal vault, the patient had been sent home. The specimen comprised a very extensive epithelioma of the cervix which had also invaded two-thirds of the body of the uterus.

Examination of the Fallopian Tubes.

DR. H. S. JACOBS demonstrated the use of Rubin's apparatus for testing the patency of the Fallopian tubes.

Radiography.

DR. C. E. DENNIS and DR. COLIN MACDONALD showed numerous skiagrams illustrating obstetric conditions, pelvic measurements and genito-urinary lesions.

The new Radiological Department of the Hospital was thrown open for inspection.

Pathological Specimens.

DR. C. H. MOLLISON showed a large number of very interesting pathological specimens, included amongst which were the following.

1. Pregnancy in a rudimentary horn of the uterus with torsion and rupture of the sac, followed by profuse hæmorrhage and death. Dr. Mollison briefly described the development and congenital abnormalities of the uterus.

2. A uterus about three months pregnant which had been perforated by a soft rubber catheter. A blood culture taken before death had revealed a growth of *Bacillus aerogenes capsulatus*.

3. Placental polypi causing severe hæmorrhage and simulating malignant disease. The formation of these polypi by the organization of placental remnants was briefly described.

4. Chorion epithelioma of the body of the uterus, with secondary growths in the brain, but only one small one in the lungs.

5. A uterus showing four quite distinct and separate tumours; a subperitoneal lipoma, a polypus in the cavity, a malignant growth in the body and an interstitial myoma.

6. Complete inversion of the uterus with the placenta still attached. The patient had died shortly after admission to hospital.

NOMINATIONS AND ELECTIONS.

THE undermentioned has been nominated for election as a member of the New South Wales Branch of the British Medical Association:

Voss, Kerrod Bromley, M.B., 1925 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.

THE undermentioned have been elected members of the New South Wales Branch of the British Medical Association:

Golding, Frederick Campbell, M.B., Ch.M., 1926 (Univ. Sydney), 14, Bedford Place, Bloomsbury, London, W.C. 1.

Hill, Leslie George, M.B., Ch.M., 1926 (Univ. Sydney), Beechworth Road, Pymble.

Mills, Dorothy Isabel, M.B., Ch.M., 1926 (Univ. Sydney), The Sydney Sanitarium, Wahroonga.

Woodland, Leslie James, M.B., Ch.M., 1926 (Univ. Sydney), 278, Clovelly Road, Randwick.

Playoust, Roger André, M.B., Ch.M., 1924 (Univ. Sydney), Queen Street, Mosman.

Medical Societies.

NEWCASTLE HOSPITAL CLINICAL SOCIETY.

A MEETING OF THE NEWCASTLE HOSPITAL CLINICAL SOCIETY was held at the Newcastle Hospital, New South Wales, on June 2, 1927. The meeting took the form of a series of demonstrations by members of the honorary staff.

Loss of the Astragalus by Accident.

DR. F. W. D. COLLIER showed a male patient, a mechanic, aged twenty-four years. On March 11, 1927, while riding a motor cycle he had collided with a motor 'bus and had sustained a lacerated wound on the lateral and anterior aspects of the right ankle joint extending into the joint. X ray examination had revealed a fracture behind the neck of the astragalus and an injury to the *os calcis* evidently caused by the anterior surface of the tibia coming in contact with it, the foot being in the dorsiflexed position. The wound had been excised and the limb put upon a back splint. On June 3, 1927, the patient had been discharged from hospital. The wound had healed. Two and a half centimetres (one inch) shortening was present and the ankle was very stiff.

The interest of this case was that the body of the astragalus had absolutely disappeared. No trace of it could be found even with a stereoscopic picture. The tibia rested on the *os calcis* posterior to the position required in Whitman's astragalectomy, with the head and neck of the astragalus against the anterior surface of the tibia.

Submaxillary Calculus.

DR. KEITH WATKINS demonstrated two types of submaxillary calculus. Another patient suffering from what in England was considered to be the common type, namely the spindle-shaped calculus in Wharton's duct, was unfortunately not able to appear that night.

Dr. Watkins said that it was not sufficiently realized that salivary calculi were almost invariably opaque to X rays.

The first case illustrated submaxillary adenitis with a calculus of insignificant size in Wharton's duct. The patient, a man, aged thirty-seven years, had been seen in May, 1927. He had complained of a lump in the region of the left submaxillary region of ten days' standing. It had varied in size, especially at meal times when it became painful. An X ray picture had revealed no calculus, but only an indefinite shadow at the site of the gland. On examination a tender swelling 1·8 centimetre (three-quarters of an inch) in diameter had been felt in the region of the left submaxillary gland. There had been a tiny swelling of the papilla of the left Wharton's duct, but no definite calculus had been palpable. In view of the certainty of the diagnosis, the last three millimetres (one-eighth of an inch) of the duct had been incised and had been found to contain a calculus 1·5 millimetres in diameter. The calculus was shown by Dr. Watkins.

The second case was that of a calculus in the deep part of the submaxillary gland. The patient, a man, aged seventy-seven years, had been sent to Dr. Watkins on April 14, 1927, complaining of a swelling below the angle of the left lower jaw which he had noticed for five months. On examination there had been a hard lump in the posterior part of the submaxillary region about 2·5 centimetres (one inch) in diameter. Its surface was smooth and it was not fixed to the skin, but appeared slightly fixed to the deep structures. From inside the mouth the mass appeared smaller, about nine millimetres (three-eighths of an inch) in diameter and part of it was irregular and immediately under the mucosa almost in the pharynx. No calculus or abnormality was found in Wharton's duct. No history of pain during meals could be elicited, though the swelling varied in size and tenderness from time to time. A diagnosis of submaxillary calculus had been made and this had been verified by X ray examination when a dense shadow was demonstrated.

Dr. Watkins said that this type of calculus, situated in the part of the submaxillary gland which lay deep to the mylo-hyoid muscle, was very rare in London. On the other hand, of six submaxillary calculi seen in Newcastle during the previous eighteen months, four had been of this type. These calculi were easily removed *viâ* the mouth compared with the duct calculi which were notoriously difficult to remove on account of their mobility. Once the gland calculus had been felt from the mouth and its nearness to the palpating finger was appreciated, no difficulty would be experienced in diagnosing further calculi from the same position. Dr. Watkins had not heard this sign previously mentioned.

Bronchopneumonia Simulating Laryngeal Diphtheria.

DR. T. HAMILTON reported a case of bronchopneumonia simulating diphtheria. He read the history of the patient and an account of the *post mortem* findings (see page 299).

Pyloric Stenosis in an Infant.

DR. S. GARDINER showed a baby who had been admitted to hospital on February 6, 1927, weighing four kilograms (eight and three-quarter pounds) with a history of "vomiting all her food for two weeks and losing weight." Visible peristalsis had been present and the urine had contained acetone. The "milk fat" in her diet had been reduced and bicarbonate of soda and belladonna had been given by mouth and bicarbonate of soda had been given by the rectum. Her weight had increased 0·45 kilogram (one pound) in eight weeks, but vomiting had then recurred and acetone had increased. Rammstedt's operation had been performed two weeks previously and the child had not vomited since. She had put on 0·9 kilogram (two pounds) in weight and had no acetone in the urine.

Unilateral Raynaud's Disease.

DR. A. C. ARNOLD showed a woman, aged forty-nine years, who was suffering from Raynaud's disease. She had been seen for the first time on May 21, 1927, complaining of sudden pain and numbness in the left leg. Six years previously she had had an attack of gangrene in the same leg. Blisters had developed and she had been in hospital for about six weeks. She had had some "heart attacks" with dyspnœa and auricular fibrillation and one attack of renal colic.

On examination the left leg had been livid and cold and devoid of all sensation in the lower two-thirds to all tests. There had been a band of hyperæsthesia about 2·5 centimetres (one inch) wide at the upper limit of anæsthesia. Both legs had been mottled as though by the staining of old hæmorrhages and resembled *ephelis ab igne*, though the patient had not been in the habit of warming herself in front of a fire. There had been a good deal of pain in the leg generally of neuralgic character. The urine had contained no sugar or albumin; the serum had not reacted to the Wassermann test. She had been treated by rest in bed, radiant heat and elevation of the limb. Aspirin, phenacetin and caffeine and "Barbitone" had been given for the pain and the nitrites had been given in tablet form. Two days later an exquisitely tender spot had developed just outside the anterior edge of the tibia at the junction of the upper and middle thirds. Sensation was returning gradually under treatment and with massage the leg was recovering more rapidly than the toes.

Congress Notes.

THE AUSTRALASIAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE nineteenth meeting of the Australasian Association for the Advancement of Science will be held in Hobart, Tasmania, during the week commencing January 16, 1928. The President-Elect is MR. R. H. CAMBAGE, C.B.E., F.L.S.

Fifteen sections have been formed for the meeting. Those most likely to be of interest to medical practitioners are Section F—Anthropology, Section I—Medical Science and National Health and Section N—Physiology and Experimental Biology. The President of the Section of Anthropology is Dr. R. H. Pulleine and Secretary is Dr. W. L. Crowther, of Hobart. The President of the Section of Medical Science and National Health is Dr. J. H. L. Cumpston and the Secretary is Dr. C. N. Atkins, of Hobart. The President of the Section of Physiology and Experimental Biology is Professor H. G. Chapman and the Secretary is Dr. J. H. B. Walch, of Hobart.

Medical practitioners are urged to become members of the Association and to attend the meeting. Membership involves the payment of a subscription of one pound for each session, payment to be made in advance. Those who wish to become members are invited to communicate with the Local Secretary of the State or Dominion in which they reside. The Local Secretaries are as follows:

New South Wales: Dr. A. B. Walkom, Royal Society's House, 5, Elizabeth Street, Sydney.

Victoria: E. R. Pitt, Esquire, Public Library, Melbourne.

South Australia: R. S. Burdon, Esquire, The University, Adelaide.

Western Australia: A. Gibb Maitland, Esquire, Government Geologist, Perth.

Queensland: C. T. White, Esquire, Government Botanist, Brisbane.

Tasmania: Clive Lord, Esquire, Tasmanian Museum, Hobart.

New Zealand: Professor C. Coleridge Farr, Canterbury College, Christchurch.

The privileges of membership include participation in all meetings, lectures and entertainments and the right to participate in excursions. Each member receives a copy of the report of the meeting. This volume contains the addresses of the President and of the Presidents of Sections, the reports of Research Committees and selected papers read before the Sections during the meeting. Ladies who do not wish to become ordinary members and students attending university, technical college, working men's college, school of mines or other institution named by the Council in Australia or New Zealand, may become associate members on the payment in advance of a sum of ten

shillings. Associate members are entitled to all the privileges of membership except the right to vote and the right to receive a copy of the Proceedings.

CLINICAL CONGRESS OF PHYSICAL THERAPY.

THE American College of Physical Therapy has arranged to hold its Clinical Congress of Physical Therapy for 1927 and its sixth Annual Meeting at the Hotel Sherman, Chicago, from October 31 to November 5, 1927.

An extensive programme has been arranged. The first three days are to be devoted to a school of instruction. For this purpose some of the most prominent clinicians and teachers in the United States of America have been selected. The teaching will be of a fundamental nature and particular attention will be paid to clinical training. On the fourth day sectional meetings will be held. Three sections have been formed as follows:

1. Medicine, diagnosis, pædiatrics and endocrinology.
2. Surgery, gynæcology, urology and orthopædic surgery.
3. Eye, ear, nose, throat and oral surgery.

On the fifth day of congress a joint session will be held. Special addresses will be delivered by prominent medical practitioners and the subjects chosen will be those of interest to specialists in all branches of medicine. The last day will be devoted to clinical demonstrations. In addition to this programme a series of scientific and commercial exhibits has been arranged.

In view of the rapid strides which have been made during the past few years in this subject, the American College of Physical Therapy is anticipating a large attendance. Medical practitioners who intend to be abroad from the Commonwealth in the near future, and who are interested in physical therapy, are invited to become enrolled by mail as soon as possible. The fee for the instruction classes is ten dollars and this amount is payable whether they are members of the College or not.

Those who are not members of the College, must pay an additional registration fee of five dollars.

Further information may be obtained from the Chairman of the Convention Committee, American College of Physical Surgery, Suite 820-830, North Michigan Avenue, Chicago.

NOTICE.

WE have been requested by the Council of the Victorian Branch of the British Medical Association to invite any of the members of the Branch who intend to be present at the Nineteenth Meeting of the Australasian Association for the Advancement of Science in Hobart, or at the Seventh Congress of the Far Eastern Association of Tropical Medicine, to communicate with the Secretary of the Branch. The Far Eastern Association of Tropical Medicine will hold its congress at Calcutta on December 5, 1927.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

A MEETING of the Senate of the University of Sydney was held on August 8, 1927.

The following degrees were conferred *in absentia:*

Doctor of Medicine (M.D.).—Edmund Harold Molesworth.

Master of Surgery (Ch.M.).—Kevin Faulkner Tarlinton.

The Fellows of the Senate extended a hearty welcome to the Vice-Chancellor-Elect, Professor R. S. Wallace, who was present at the meeting at the invitation of the Deputy-Chancellor.

The Carnegie Corporation of New York notified its approval of the proposed allocation between the University Extension Board and the Joint Committee for Tutorial Classes of the grant of five thousand dollars recently made by the Corporation for Adult Education.

Dr. Harvey Sutton was nominated as the representative of the University on a Consultative Committee to give scientific assistance to the Meat Industry Board regarding complaints of nuisances from sewer vents in the Western Suburbs.

A letter was received from Professor Andrew Lawson, of the University of California, offering to present to the University, on behalf of the family of the late Professor Anstruther Lawson, the late Professor's library of botanical works, his botanical material and collections, about one thousand coloured lantern slides and a collection of botanical pamphlets. It was agreed to accept the offer with grateful thanks and to place on record the appreciation of the Senate for this valuable gift.

The Perpetual Trustee Co., Ltd., advised that under the will of the late Richard Gaut a sum of £5,000 had been bequeathed to the Cancer Research Fund. The Senate decided to place on record its appreciation of this munificent bequest.

Professor John Read, of the University of St. Andrew's, was nominated to represent the University at the Commemoration Ceremony to be held in Paris in October next to celebrate the one hundredth anniversary of the birth of Monsieur Berthelot.

On the recommendation of the Faculty of Science the Walter Burfitt Scholarship was awarded to Mr. A. A. Luciano. Mr. Luciano has completed the three years' course for the B.Sc. degree and is now attending a fourth year to qualify for honours. In March last he was awarded High Distinction in Organic Chemistry and Distinction in Chemistry III.

The following appointments were approved:

Mr. R. C. Cramp, B.V.Sc., as Honorary Demonstrator in Veterinary Pathology and Bacteriology.

Mr. H. R. Carne, B.V.Sc., as Lecturer in Veterinary Pathology and Bacteriology.

The following resignation was accepted:

Professor J. Kenner, Professor of Organic Chemistry (Pure and Applied), in consequence of his acceptance of the Chair of Technological Chemistry in the University of Manchester. The Senate resolved to place on record its congratulations to Professor Kenner on his new appointment, and regret for the loss of his services to this University.

Dr. E. S. Morris (Acting Director-General for Public Health) was invited to accept a seat on the Cancer Research Committee during the absence abroad of the Director-General (Dr. Robert Dick).

The following amendments to the Regulations and By-laws regarding the subjects of French and German were adopted:

That the Matriculation Regulations for Higher French and Higher German be amended to read as follows:

Higher French.—Alternative papers will be set. For the award of bursaries and exhibitions, of the marks gained in the French I and French II papers, greater weight will be given to those in French II. Only candidates who have passed in French II will be entitled to take French as a qualifying subject in the Faculty of Arts.

French I.—This paper will consist chiefly of translation from French into English, but will include a simple translation from English into French. After 1928 the translation into English will be partly from specified books.

French II.—This paper will comprise:

(*a*) Unprepared translation into English;

(*b*) Translation into French and

(c) A short essay in French on a simple subject. (List of books to remain.)

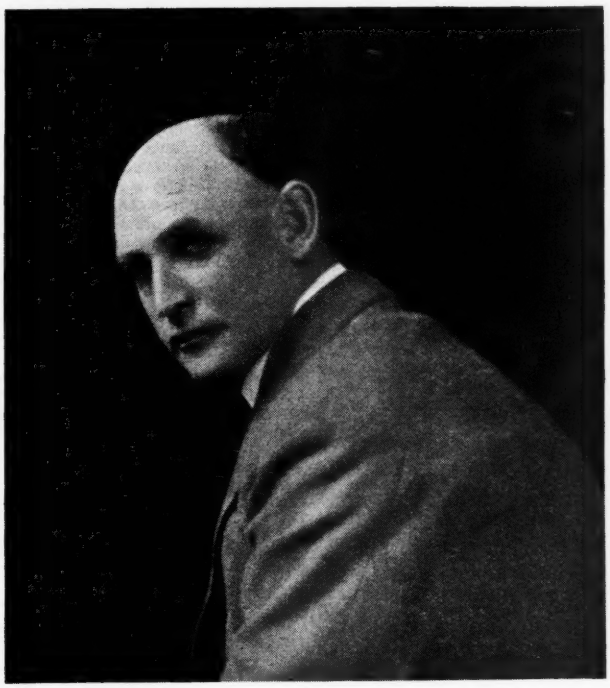
Higher German.—An examination, with alternative papers, similar to that in Higher French.

Obituary.

EUSTACE WILLIAM FERGUSON.

ON July 18, 1927, death claimed Eustace William Ferguson. For eighteen years the spectral figure had cast a shadow across the path this genial man of science trod. His steadfastness of purpose, his deeply rooted allegiance to his work and his unshakeable determination to use life to the best effect, held the threatening monster in the background. By forgetting his fate, he fulfilled his duty to his family and to mankind in a manner that few men succeed in doing.

Eustace William Ferguson was born in Invercargill, New Zealand, on October 24, 1884. At the age of ten years he came to Sydney. His early education was guided by James Oliver, a renowned classical scholar. At the age of eighteen he entered the University of Sydney. At first he took up the Arts course and later he entered the Medical School, where he soon earned the reputation as a man of unusual attainments. In his third year he secured first class honours. In December, 1908, he graduated in medicine and in 1909 took the degree of master of surgery. During his student days he was popular among his contemporaries and he held the respect and admiration of his teachers. After he had graduated he was appointed resident medical officer at the Sydney Hospital. The responsibilities of this position were carried by him with a full sense of their gravity, but without fear or evasion. During this period he was attacked by an illness which led to a nephritis. From this time onward he realized that sooner or later his renal lesion would gain the mastery. In 1909-1910 he served as Pathologist to the Sydney Hospital for a year and then laid the foundation for the career that has made him eminent among his colleagues. In 1911 he joined Dr. Walton Smith in private practice and at this stage he married. His spell in private practice was short, for in the year 1912 he gained an appointment in the Public Service and became a medical officer at the Rydalmere Hospital for the Insane. After a term of eight months he was transferred to the Microbiological Laboratory of the Department of Public Health. Dr. J. B. (now Professor) Cleland was then Principal Microbiologist and Ferguson acted as assistant Microbiologist for a period of seven years. Prior to this he had taken up the study of pure biology and had made some original observations on the *Amycterides* (*coleoptera*) in 1909. His intimate knowledge of the insect vectors of disease added to the natural aptitude he possessed for scientific research, rendered his collaboration with Dr. Cleland particularly valuable. These two men worked admirably together. Although different in temperament and outlook, they had sufficient in common to cement a friendship of a lasting type.



Those were seven happy years, full of solid work, of fond hopes and of achievements. His relations with the other medical members of the Department from the Director-General, Dr. G. W. Armstrong, downwards were also excellent. Soon after the outbreak of war he sought to join the Australian Imperial Forces, but was twice refused as medically unfit. On the third attempt he was accepted. He left Australia in August, 1915, and was sent to England. For some months he was kept at Harefield. He then found it necessary to undergo a minor operation at a hospital in London, which he stood well. Indeed, through the period of his active service his renal trouble remained quiescent. He was invalided home to Australia, but regained his strength on the voyage and after a few weeks in Sydney he again joined the troops. This time he was commanded to the No. 3 Australian General Hospital in Rouen, France. For the greater part of the time he was occupied in pathological work and in consequence his services were of great value to the Australian forces. In October, 1917, he received his majority and was then sent to Palestine. He joined the Anzac Field Laboratory and was in the Jordan Valley for a considerable time. After the advance he was enabled to reach Aleppo, a position in the far north. He remained for a short time in Egypt after the armistice.

While in London he naturally turned to the Lister Institute of Preventive Medicine and gained much help and guidance from Professor C. J. Martin, particularly in connexion with modern methods of pathological and bacteriological work. Throughout the war period he revealed an extraordinary keenness and readiness to do his share. His colleagues speak of him in terms of sincere admiration and of personal regard.

On his return to Sydney he again took up his position as assistant Microbiologist. In 1920 Dr. Cleland was called to Adelaide as Professor of Pathology and Ferguson stepped into the office of Principal Microbiologist, a position which he filled with signal success until his death.

His interest in biology to which reference has already been made, deepened with time. He worked hard at his revision of the classification of the *Amycterides* and published no less than sixteen papers on this subject in the *Proceedings of the Linnean Society of New South Wales*, in the *Transactions of the Royal Society of South Australia* and in the *Proceedings of the Royal Society of Victoria*. In 1914 he took up the study of certain diptera. Many of the seventeen papers on blood sucking and other flies are of prime importance. A number of learned articles have appeared in this journal on medical subjects, some of which were written by him in collaboration with one or other of his colleagues, and some of which he wrote without collaboration. He published a large number of important reports which were incorporated in the annual

reports of the Director-General of Public Health of New South Wales. He was a member of the Linnean Society of New South Wales and was elected a member of its Council in 1921. In 1926 he was elected its President. His address on the termination of his term of office was written after he had been taken ill. The proofs were corrected when his sight was failing and the address was read for him, while he was lying helpless in bed. The address is a masterly review of the present knowledge of medical and veterinary entomology. He was also an active and prominent member of the Royal Zoological Society and held the position of President in 1922-1923. He was a member of the Royal Society of New South Wales, the Royal Society of South Australia, the Entomological Society and the Australian National Research Council.

In 1925 he was working at the subject of dengue fever and infected himself, with the result that he was very ill for a time. In 1926 he attended the meeting of the Australasian Association for the Advancement of Science at Perth. He contributed several papers to the last session of the Australasian Medical Congress (Brisbane, 1920).

From this necessarily brief and somewhat disconnected account of his activities it will be gathered that Eustace William Ferguson was a man of great versatility. He was a true patriot and a hard worker. His pluck and patience, his good nature, cheerful disposition and geniality were recognized by all his friends and by many of his acquaintances. In his home, where he was surrounded by his wife and six fine children, his presence brought happiness and content. The sincerest sympathy of the medical profession is extended to that saddened family group. His last illness started in November of 1926. From the first it was apparent that nothing could avert the swift progress of the disease for long. Skilled medical attention, good nursing and loving care kept him alive for eight months. The tragedy has robbed his profession of one of its best friends.

ANDREW STEWART.

WE announce with regret the death of Dr. Andrew Stewart, which occurred at Southport, Queensland, on August 18, 1927.

Correspondence.

POST-GRADUATE TEACHING.

SIR: Nearly thirty years ago when visiting London, I determined to try to find a medical man who, as a youth, had been *dux* of my school and showed great promise of a brilliant career as he graduated M.D. (London) with distinction. I found him on the staff of a large hospital as one of the junior surgeons and watched him operate; in fact he performed Trendelenburg's operation for varicose veins very slowly and carefully. In the course of conversation with him afterwards and finding that he had only been some seven or eight years in practice and mostly teaching surgery to the students of a very big hospital, I asked him where he had studied after he had graduated. The answer was that the only holiday he had each year which was in August, he spent that month fishing in Scotland. I said: "Don't you ever go across to Paris, Vienna, Berlin or Switzerland or to the United States of America to see other men operate?" He said: "Certainly not. By the end of the year I am completely exhausted and I require a holiday for my health's sake and am certainly not going to waste my time in standing about seeing other men operate."

Shortly afterwards I was looking on while Professor Rutherford Morison, Senior Surgeon at the Newcastle Hospital, was removing a kidney and among the white-robed visitors standing in silence watching this master of surgery, I was attracted by a man with a striking physiognomy intensely watching every detail. I walked home with him afterwards and found this was William J. Mayo, who spent a few weeks every year in England or on the Continent, watching other men perform operations which he himself had probably devised. He just went in as one of the crowd and humbly took his place. This man had left his enormous Mayo clinic and come across the water to see other men operate.

Then I went to Edinburgh and found several keen Canadians and Americans watching Harold Stiles or Alexis Thompson or Professor Francis Caird among the crowd of students who fill the Edinburgh hospitals. In Paris Reclus had many British and Americans at his classes. Every one of these surgeons had visited different places on the Continent on money hardly earned by coaching fees. Harold Stiles who with Milne Murray and Alexis Thompson was a tutor in my own student days, had already spent some time with Kocher in Berne and translated the first edition of the latter's work.

Later on in Newcastle Halstead and Howard Kelly and at Leeds Infirmary at Moynihan's own clinic were to be seen with many very alert surgeons of other countries looking on. In London again Mayo Robson's private operations were nearly always done in the presence of two or three foreign surgeons. Again, with Victor Horsley I found a few Australian surgeons and some of other nationalities intensely quiet and watching very keenly this master of surgery removing a Gasserian ganglion for trigeminal neuralgia. At Bland Sutton's clinic I met Drs. Worrall and Clubbe.

What a contrast the first picture to all the others! The first man, with a brilliant brain, working himself stale mentally and physically, achieved no distinction in after life.

About 1907 I had already removed one of the very earliest instances of gangrenous appendix which accompanied parturition. I had reported it in our local journal and I was thrilled indeed to find a busy man of Mayo's eminence had already seen it in print and noted the facts concerned. And yet even to this day we find men whose surgical dexterity brings them a big income and considerable local repute, who decline to meet distinguished surgeons from other countries or to attend post-graduate classes, again giving the reason that their bodily strength and their mental acumen are claimed by their own patents and that they cannot afford to "waste time" on post-graduate lectures or in seeing demonstrations.

Some men, however, are conspicuously forward in all movements that tend to the attainment of knowledge. I well remember some twenty-seven or twenty-eight years ago when demonstrations in bacteriology were given by the late Dr. R. J. Bull, by Dr. Konrad Hiller and by Dr. J. F. Wilkinson on urinalysis. These evening classes were regularly attended by such men as F. D. Bird, G. A. Syme, Hamilton Russell and many suburban practitioners.

Some twenty years ago I found how difficult were the operations for radical cure of umbilical or incisional abdominal hernias and suddenly I came across a technique of William Mayo's which threw a new light on these difficult problems. Within the last week I have seen three private patients on whom I did that operation since reading about it and the result has been perfectly successful from the patients' point of view and it would be indeed difficult to see even a scar of the operation.

Now in my limited sphere ought I to refuse to attend lectures given by men, being experts, because they are unknown to me or for the reason that I can find just as clever or able men nearer at hand? I have a very vivid remembrance of a brief stay in Sydney. There I watched a man whose hands reminded me of Lawson Tait's and from whom I got several hints concerning the technique of surgical abdominal operations. Again, I have been to Adelaide and derived much benefit from the knowledge and experience of Professor Watson.

On the other side of the ledger is the fact that for some twenty years I took no holidays except those which were spent in the capital cities of Australia, but such is my temperament that I felt just as much refreshed mentally and bodily by those visits as if I had lain in the country or the seaside kicking my heels and doing nothing else. As a matter of fact in these days the motor car enables one to enjoy the country in a very short time and probably this explains why so many country and suburban practitioners do not hesitate now to enter classes for post-graduate teaching when it is made available.

Yours, etc.,

J. W. DUNBAR HOOPER.

Melbourne.
August 18, 1927.

Public Health.

THE CONFERENCE ON INDUSTRIAL HYGIENE.

(*Continued from page* 243.)

AT the previous conferences certain resolutions were passed having for their object the improvement of the industrial conditions in the several States. These resolutions dealt with the provision for rest, accommodation for the changing of clothes and for luncheons, the ventilation and lighting of factories and workshops and the like. In 1923 Dr. C. Badham conducted an investigation into the health and factory conditions of certain textile workers. He submitted a tentative scheme of dry kata-thermometer readings. In 1923 Dr. Badham investigated the conditions in some other industries and suggested that his standard might prove suitable for adoption in industry generally in the State of New South Wales. The *Factories and Shops (Amendment) Act*, 1927, of New South Wales contains provisions for the regulation of the amount of cubical and floor space, for the amount of air movement and so forth in every factory.

It was ascertained that there was little information concerning the conditions under which people worked in factories in the majority of the States. It was suggested that a general survey would prove of great value.

In regard to the qualifications for the positions of factory inspectors a considerable amount of information is included in the report. The regulations governing the examination of candidates for appointment as factory inspectors in New South Wales are reproduced. In no other State has any action been taken to bring the conditions into line with modern requirements.

The reports received from employers on the incidence of morbidity and mortality among workers, in accordance with the recommendation of the International Conference of Labour Statistics, held in Geneva in 1923, have been extremely meagre. It was obvious that only a small proportion of industrial accidents was recorded in this manner to the departments of labour.

In 1922 it was resolved to recommend the State authorities to appoint factory medical inspectors and in 1924 the conference expressed the opinion that it was desirable to appoint female medical inspectors of factories. The Department of Public Health of New South Wales created a new position of Medical Officer of Industrial Hygiene in 1923. In 1925 the Labour Department of Victoria appointed a female medical inspector of factories and shops. A year later the Victorian Government appointed an officer with special experience in industrial hygiene to promote the standard of hygiene throughout the railways service in the State.

The employment of females and young persons in industry has engaged the attention of the State authorities and new legislation is under consideration in Victoria, having for its object the restriction of such employment. In a similar manner steps are being taken in Victoria and in New South Wales to limit the weight of parcels and other goods that may be lifted or carried by women and young persons.

The *Factories and Shops (Amendment) Act*, 1927, of New South Wales contains a clause dealing with the control of dangerous trades. Special precautions have to be taken to safeguard the health and lives of persons engaged in certain dangerous trades. In connexion with this subject the International Labour Office, Geneva, has addressed the Commonwealth on the subject of medical inspection in unhealthy industries. Medical inspection by competent persons is recommended in connexion with the manufacture of lead colours and other lead compounds, with lead, zinc and mercury mining, with the manufacture of storage batteries, with the manufacture and use of aromatic nitro and amido derivatives, with the grinding of basic slag, with the manufacture of indiarubber, lead processes, carbon bisulphide processes, benzol processes, with the use of lead in the pottery industry, in the manufacture of alkaline chromates, with compressed air work, with haircutting, with the manufacture and use of carbon bisulphide in the manufacture of artificial silk, with hot enamelling on metal, with tinning or zincing of sheet metal by alloys containing lead and with chromolithography by powdered colours containing lead. The periodicity of the inspections recommended is also given.

The question of the notification of industrial diseases has been under consideration by previous conferences. In 1923 regulations were issued in connexion with this matter in Victoria. The measures governing the compensation of workmen introduced in Western Australia in 1924 and in New South Wales in 1926 contain clauses according to which disease contracted in the course of employment is regarded as an industrial injury. The Tasmanian Government had under consideration a scheme for the compensation of workmen suffering from certain industrial diseases.

The proposal to create facilities for the interchange of officers of the several States was favoured both on account of the benefit accruing to the department and on account of the education value of work in other States to the officers themselves.

(*To be continued.*)

Books Received.

THE NATURE OF DISEASE, by J. E. McDonagh, F.R.C.S.; Part II; 1927. London: William Heinemann (Medical Books), Limited. Imp. 8vo., pp. 434. Price: 21s. net.

THE QUEEN CHARLOTTE'S PRACTICE OF OBSTETRICS, by the following members of the staff of the hospital: J. Bright Banister, M.D., F.R.C.S., Aleck W. Bourne, M.B., F.R.C.S., Trevor B. Davies, M.D., F.R.C.S., L. Carnac Rivett, M.C., F.R.C.S., L. G. Phillips, M.S., F.R.C.S., and C. S. Lane-Roberts, M.S., F.R.C.S.; 1927. London: J. and A. Churchill; Sydney: Angus and Robertson, Limited. Royal 8vo., pp. 637, with illustrations. Price: 21s. net.

THE SCIENCE AND PRACTICE OF SURGERY, by W. H. C. Romanis, M.A., M.B., M.Ch. (Cantab.), F.R.C.S. (England), F.R.S. (Edinburgh), and Philip H. Mitchiner, M.D., M.S. (London), F.R.C.S. (England); Volume I, General Surgery; Volume II, Regional Surgery; 1927. London: J. and A. Churchill; Sydney: Angus and Robertson, Limited. Imperial 8vo, pp. 802 and 963, with illustrations. Price: 34s. net.

THE OPERATIONS OF SURGERY, by R. P. Rowlands, O.B.E., M.S. (London), F.R.C.S. (England), and Philip Turner, B.Sc., M.S. (London), F.R.C.S. (England); Seventh Edition; Volumes I and II; 1927. London: J. and A. Churchill; Sydney: Angus and Robertson, Limited. Royal 8vo., pp. 1055 and 902, with illustrations. Price: 70s. net.

CONTRACEPTION (BIRTH CONTROL), ITS THEORY, HISTORY AND PRACTICE: A MANUAL FOR THE MEDICAL AND LEGAL PROFESSIONS, by Marie Carmichael Stopes, with an Introduction by the late Professor Sir William Bayliss, M.A., D.Sc., F.R.S., and Introductory Notes by Sir James Barr, M.D., LL.D., F.R.C.P., Dr. C. Rolleston, Dr. Jane Hawthorne and Obscurus; New and Enlarged Edition; 1927. London: John Bale, Sons and Danielsson, Limited. Royal 8vo., pp. 506. Price: 15s. net.

Diary for the Month.

SEPT. 1.—Section of Orthopædics, New South Wales Branch, B.M.A.
SEPT. 2.—Queensland Branch, B.M.A.: Branch.
SEPT. 6.—Tasmanian Branch, B.M.A.: Council.
SEPT. 7.—Victorian Branch, B.M.A.: Branch.
SEPT. 7.—South Sydney Medical Association, New South Wales.
SEPT. 7.—Western Australian Branch, B.M.A.: Council.
SEPT. 8.—Victorian Branch, B.M.A.: Council.
SEPT. 8.—South Australian Branch, B.M.A.: Council.
SEPT. 8.—New South Wales Branch, B.M.A.: Clinical Meeting.
SEPT. 9.—Queensland Branch, B.M.A.: Council.
SEPT. 9.—Central Southern Medical Association (Goulburn), New South Wales.
SEPT. 13.—Tasmanian Branch, B.M.A.: Branch.
SEPT. 13.—New South Wales Branch, B.M.A.: Ethics Committee.
SEPT. 14.—New South Wales Branch, B.M.A.: Nomination of Candidates for Federal Committee.

Medical Appointments.

Dr. James Matthew Banks (B.M.A.) has been appointed Government Medical Officer at South Woodburn, New South Wales.

* * * *

Dr. Donald Archibald Strong Fraser (B.M.A.) has been appointed Medical Officer, Department of Mental Hospitals, New South Wales.

* * * *

Dr. Frank Clark has been appointed Officer of Health at Minlacowie, Koolywurtie and Ramsay, South Australia.

* * * *

Dr. A. N. Magnus (B.M.A.) has been appointed Medical Officer to Maylands Local Board of Health, Western Australia.

Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xx.

COMMONWEALTH DEPARTMENT OF HEALTH: Medical Officer (Female).

THE WOMEN'S HOSPITAL, CROWN STREET, SYDNEY: Resident Medical Officer.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	All Contract Practice Appointments in South Australia. Booleroo Centre Medical Club.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Medical practitioners are requested not to apply for appointments to positions at the Hobart General Hospital, Tasmania, without first having communicated with the Editor of THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales.

Editorial Notices.

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All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, Sydney. (Telephones: MW 2651-2.)

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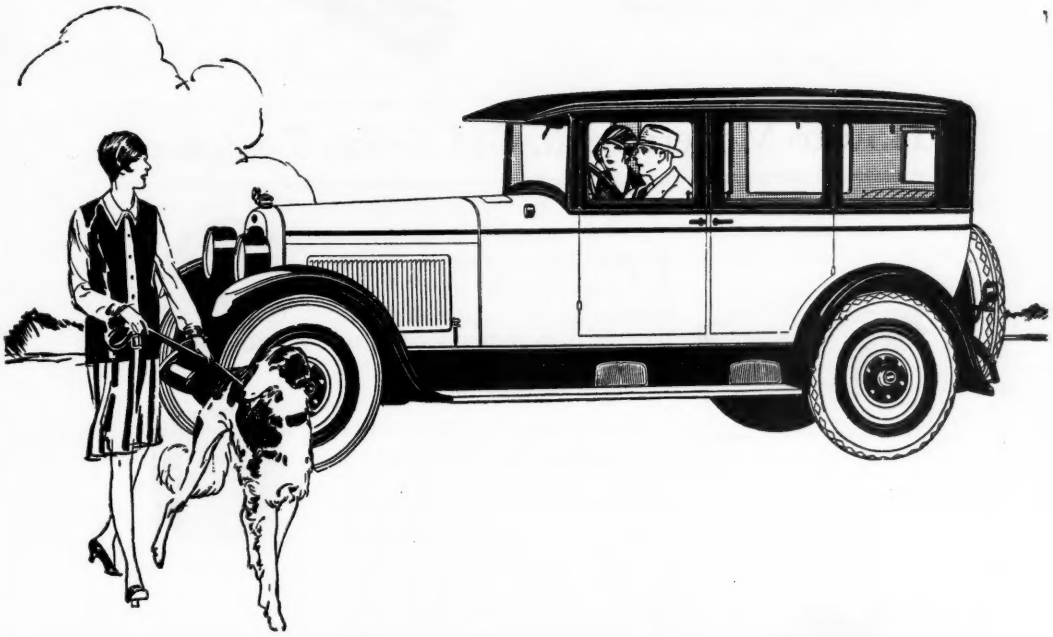

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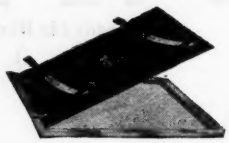

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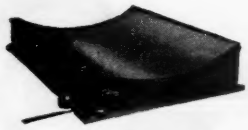

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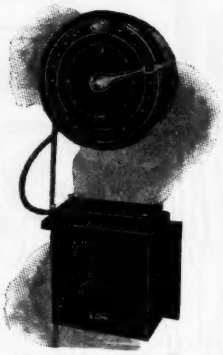

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